

Mathematik

1

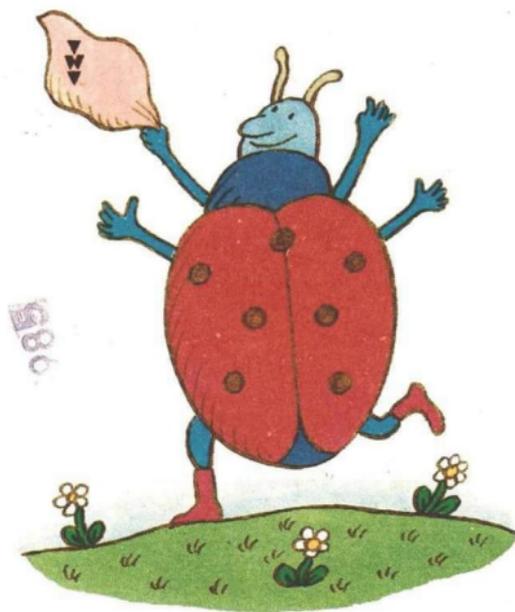




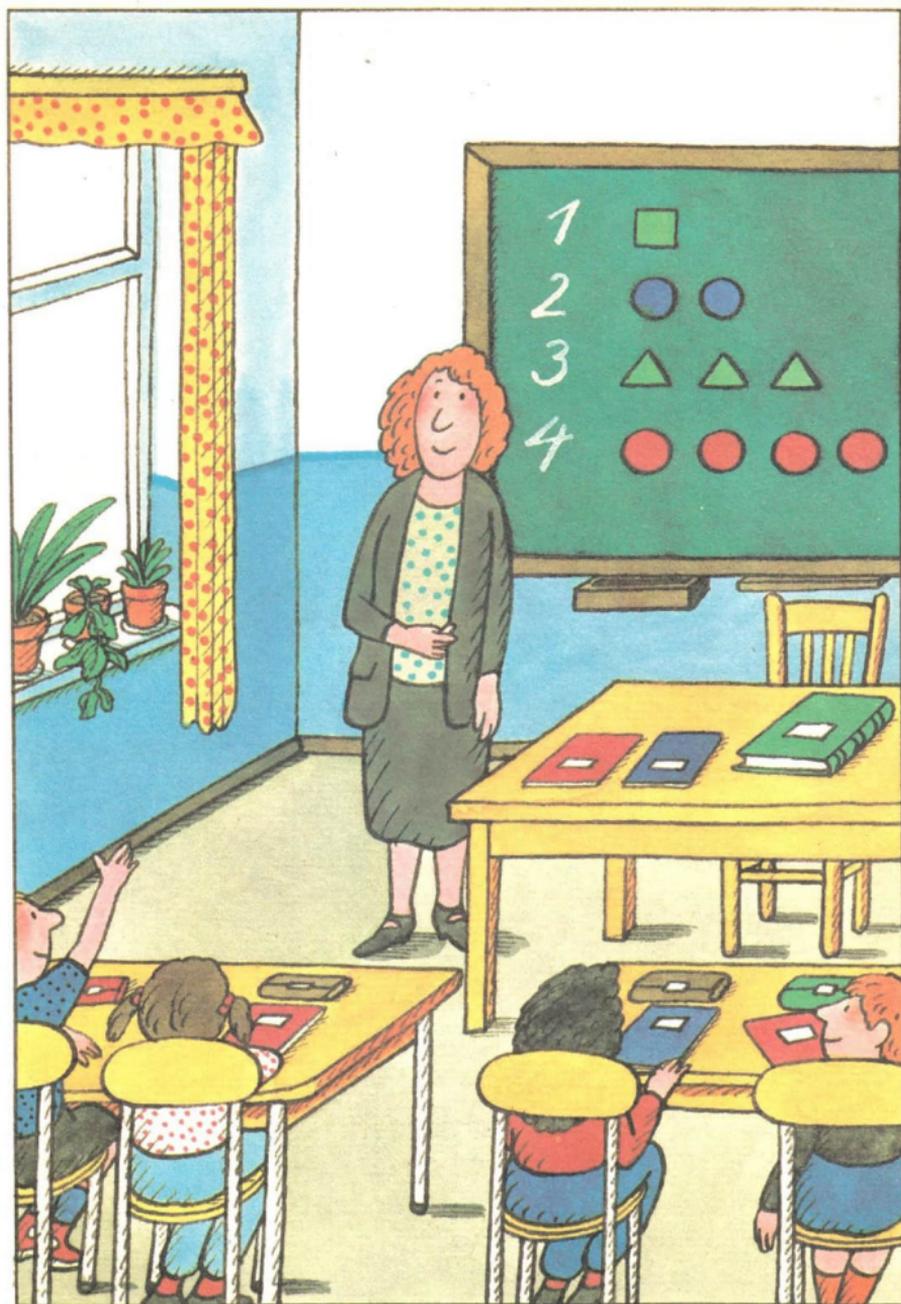


Mathematik

Lehrbuch für Klasse 1

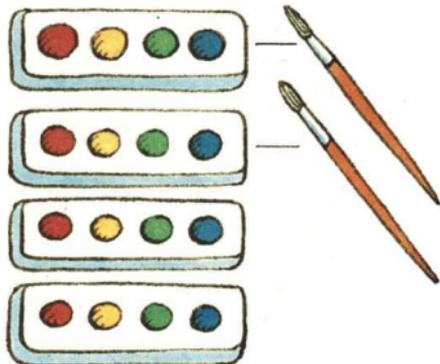
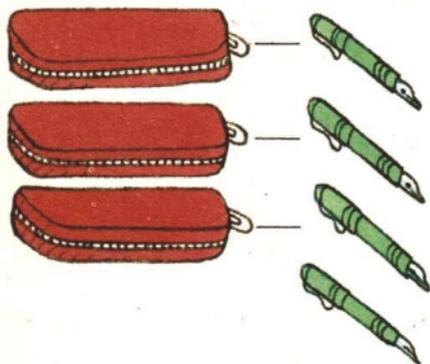
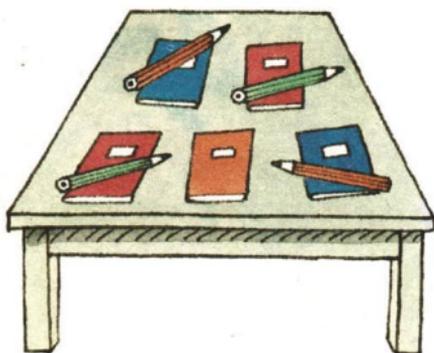


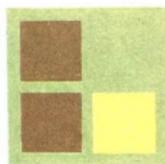
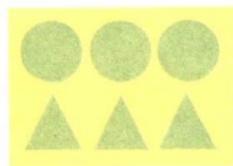
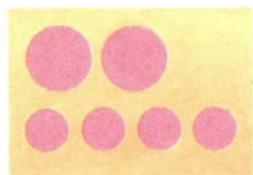
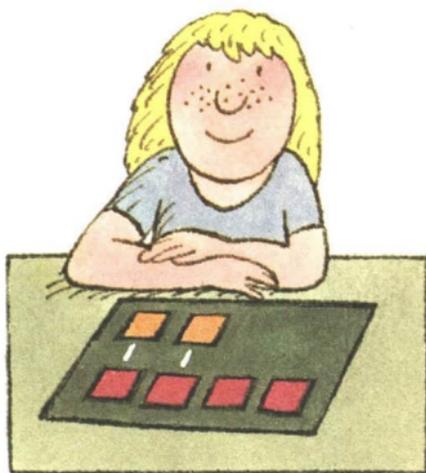
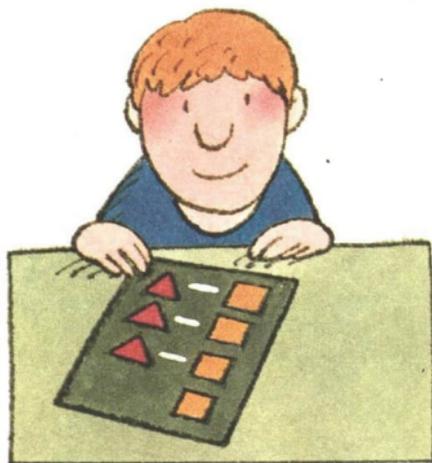
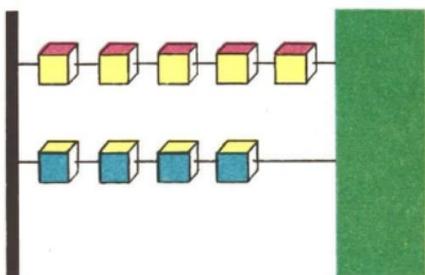
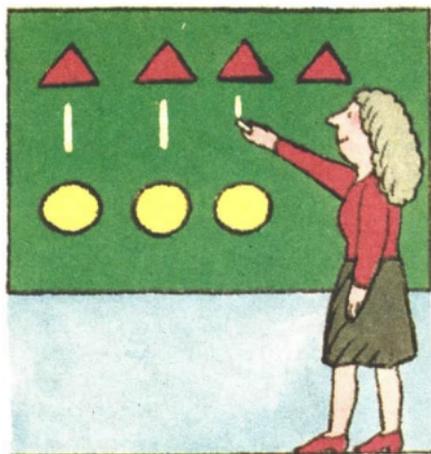
Volk und Wissen
Volkseigener Verlag Berlin
1984



Vergleichen von Mengen

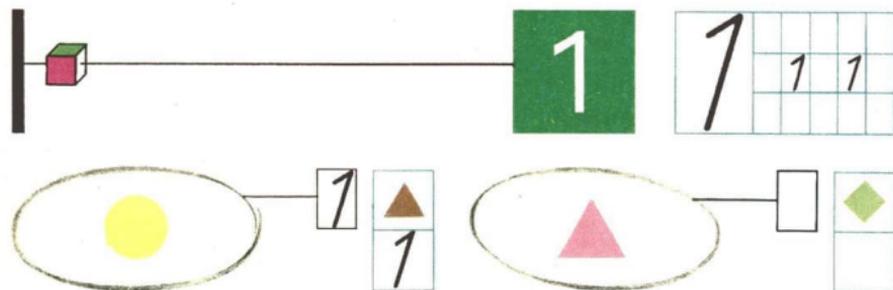
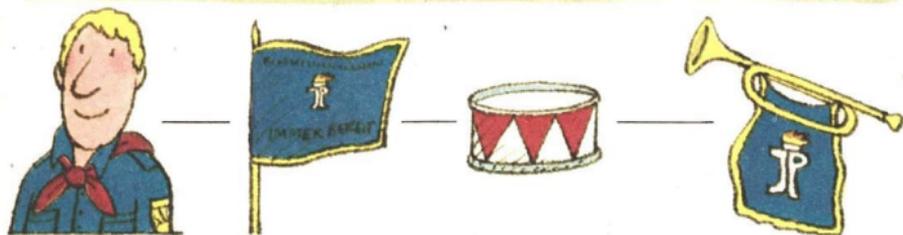
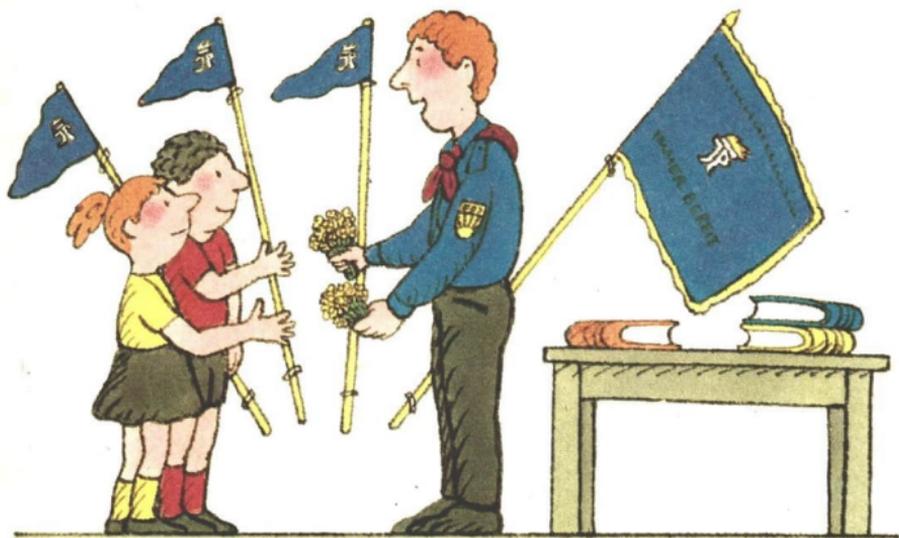
„weniger“, „mehr“, „gleich viel“

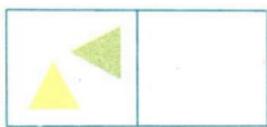
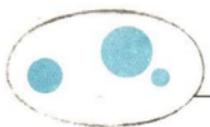
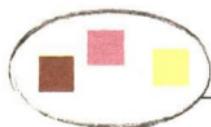
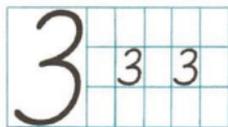
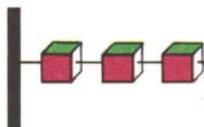
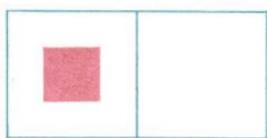
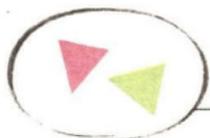
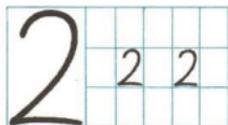
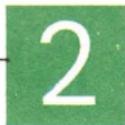
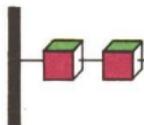


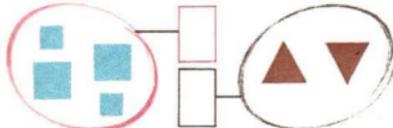
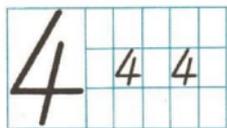
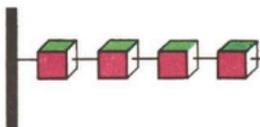
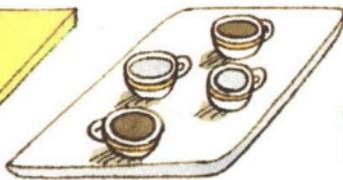
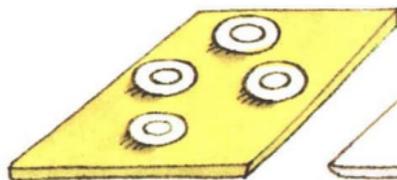
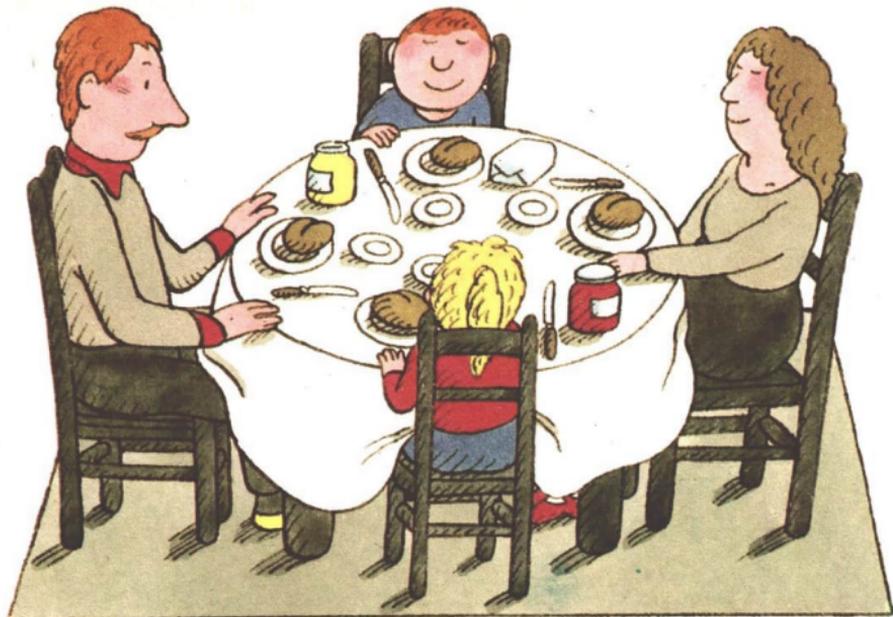


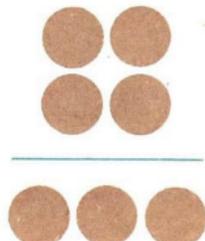
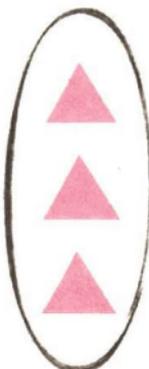
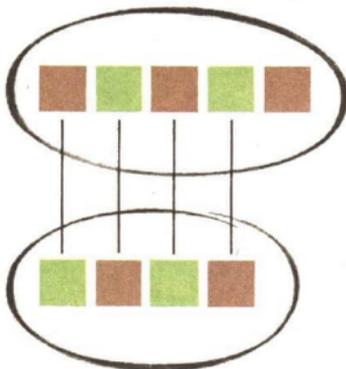
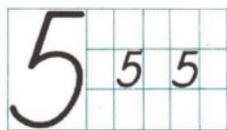
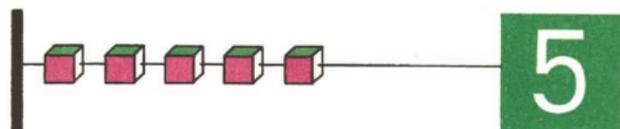
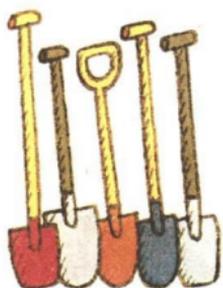
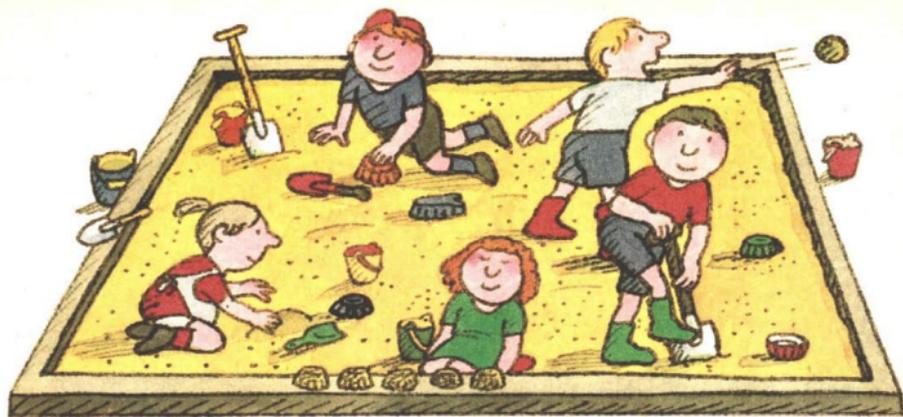
Die natürlichen Zahlen von 1 bis 10

Die Zahlen von 1 bis 5



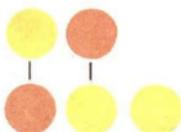
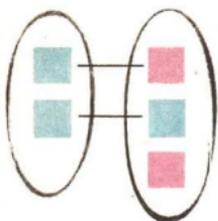
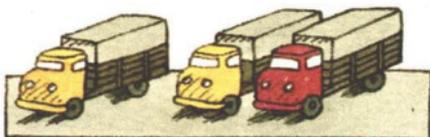




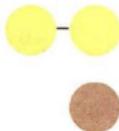
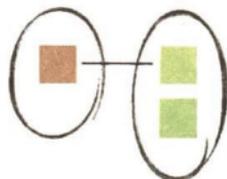


Vergleichen von Zahlen

„ist kleiner als“, „ist größer als“, „ist gleich“



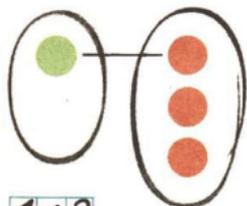
$$2 < 3$$



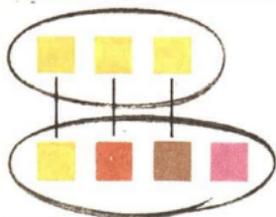
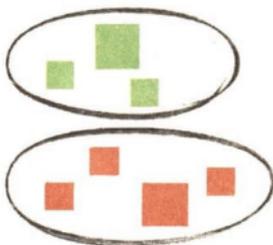
$$1 < 2$$



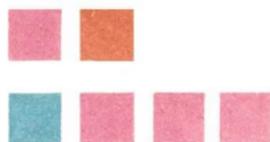
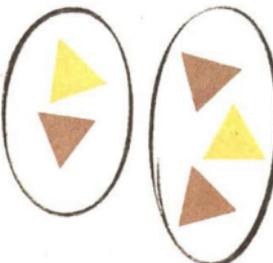
Das ist das Zeichen für „ist kleiner als“.

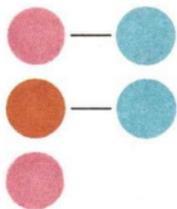
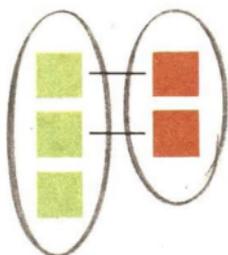
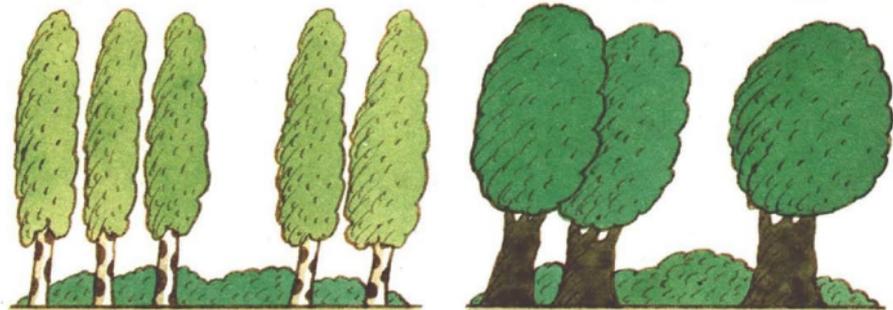


$$1 < 3$$

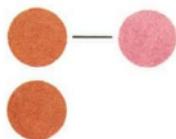
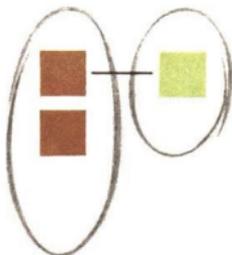


$$3 < 4$$





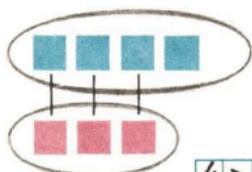
$$3 > 2$$



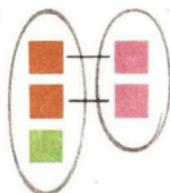
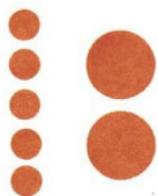
$$2 > 1$$



Das ist das Zeichen für „ist größer als“.

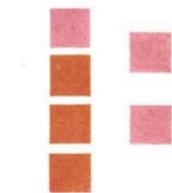
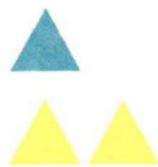


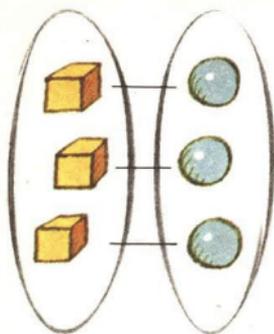
$$4 > 3$$



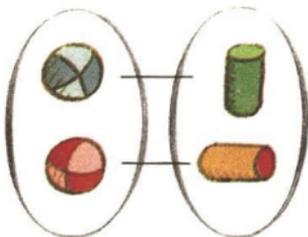
$$2 < 3$$

$$3 > 2$$

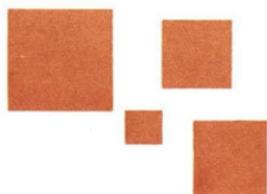




$$3 = 3$$

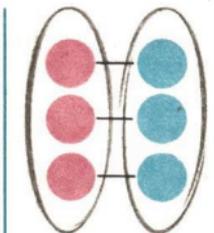


$$2 = 2$$

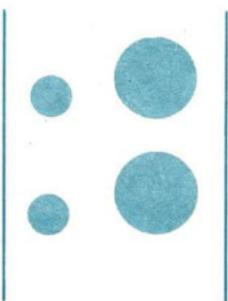
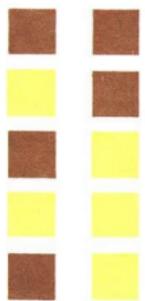
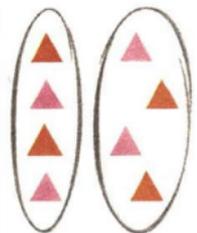


$$4 = 4$$

 Das ist das Zeichen für „ist gleich“.



$$=$$

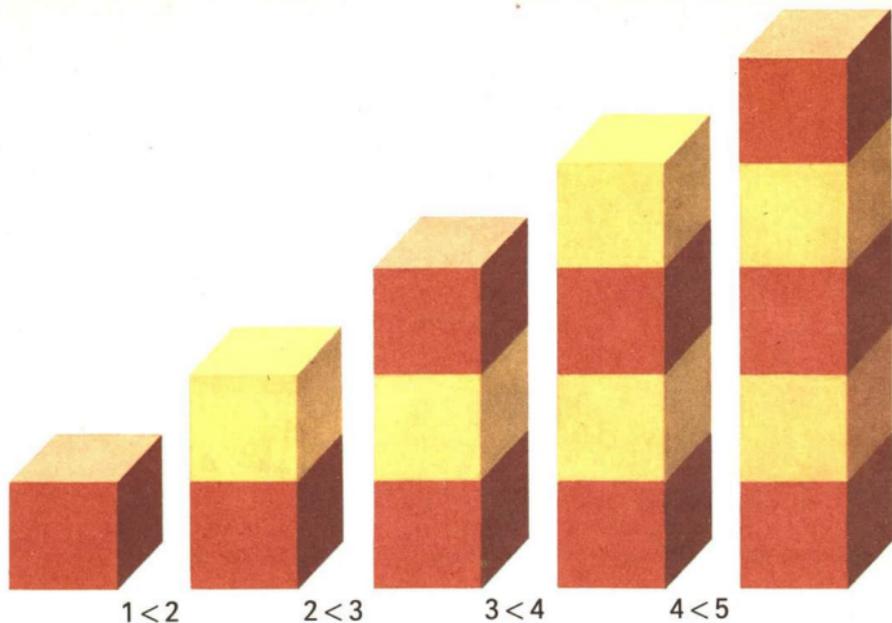


Vergleiche 2 mit 4!

$2 < 4$

4	>	3
5	=	5
3	<	5
2	<	2
5	>	1

2	3
4	2
2	5
1	1
3	4



1 < 2; 2 < 3; 3 < 4; 4 < 5
 1, 2, 3, 4, 5, ... Die Zahlen sind der Größe nach geordnet.

1	=	1
1	<	2
1	<	3
1	<	4
1	<	5

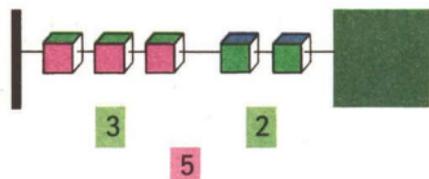
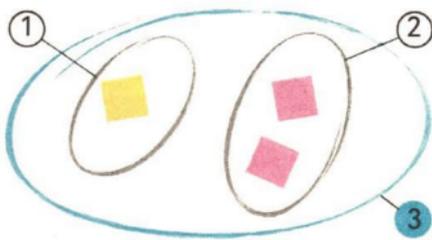
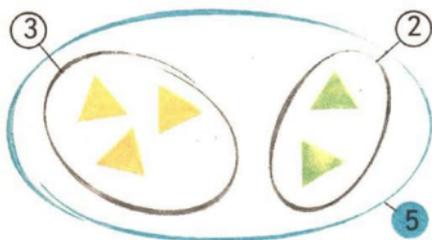
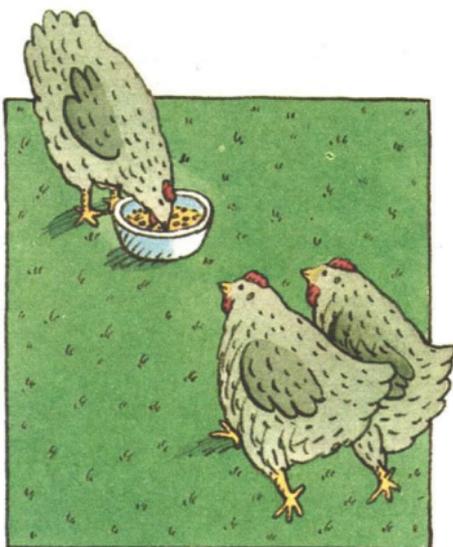
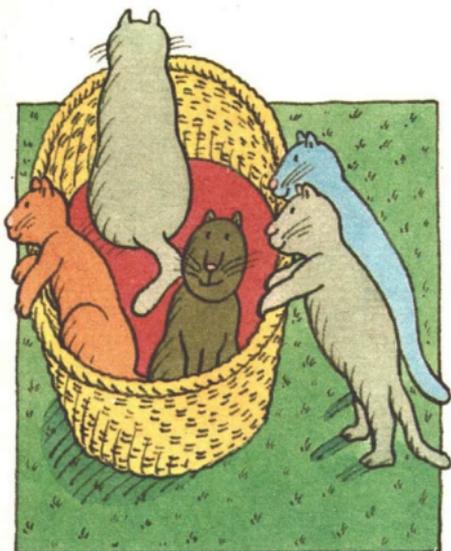
①

2	1
2	2
2	3
2	4
2	5

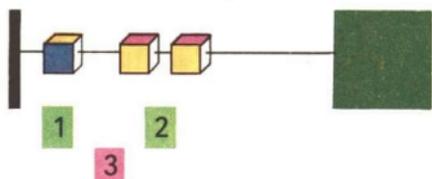
②	3	1	③	4	1	④	5	1
	3	2		4	2		5	2
	3	3		4	3		5	3
	3	4		4	4		5	4
	3	5		4	5		5	5

1, 2, 3, 4, 5, ...
 Der Nachfolger von 3 ist 4. Der Vorgänger von 3 ist 2.

Addieren von Zahlen



$$3 + 2 = 5$$

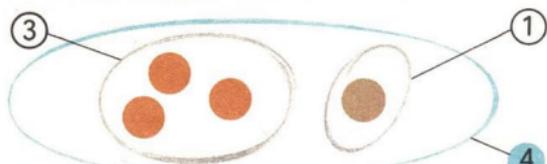


$$1 + 2 = 3$$

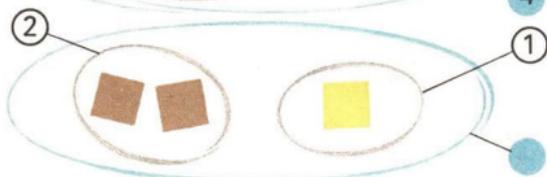


Das ist das Zeichen für „plus“.

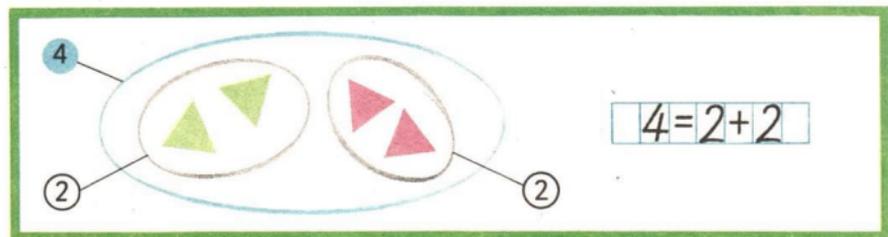




$$3 + 1 = 4$$



$$2 + 1 = \square \square \square$$



$$4 = 2 + 2$$



$$3 = 2 + 1$$

$$4 = \square \square \square \square$$





$$3 + 1 = 4$$

$$4 = 3 + 1$$



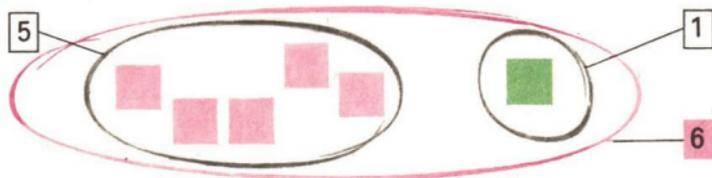
$$2 + 3 = 5$$



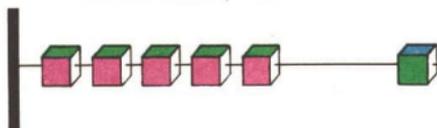
$$5 = 2 + 3$$

$3 + 2 = 5$
 $5 = 3 + 2$

①			
②			
③			



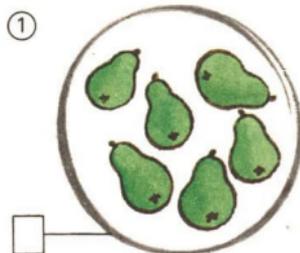
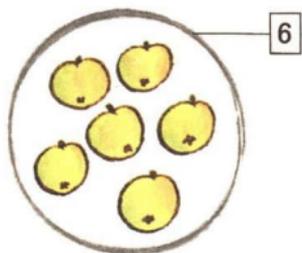
6



$5 + 1 = 6$

$5 + 1 = 6$ Der Nachfolger von 5 ist 6.
 1, 2, 3, 4, 5, 6, ...

6 6 6

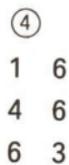
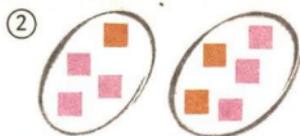




$5 < 6$

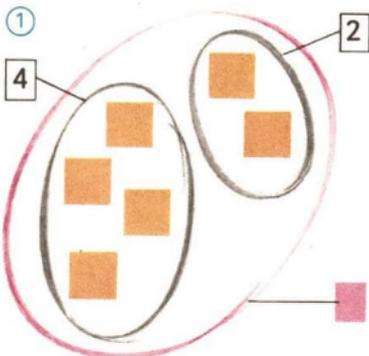


$6 > 5$

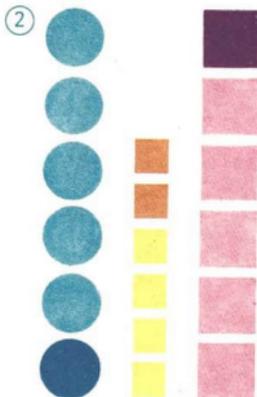


①

4

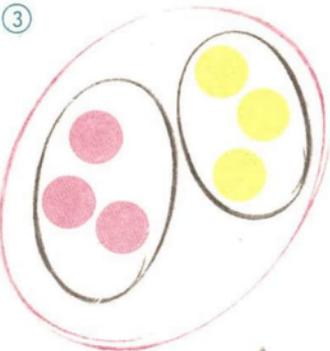


②

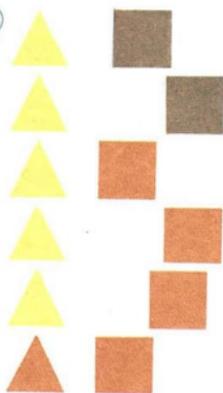


$3 + 3 = 6$

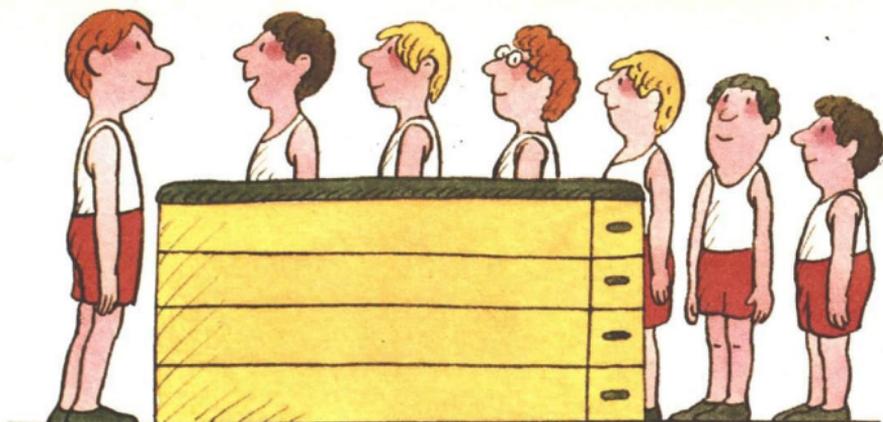
③



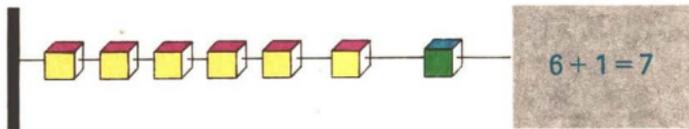
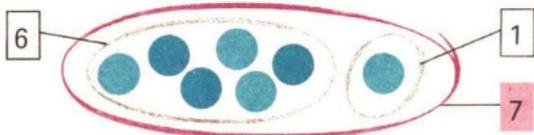
④



$6 = 4 + 2$



7



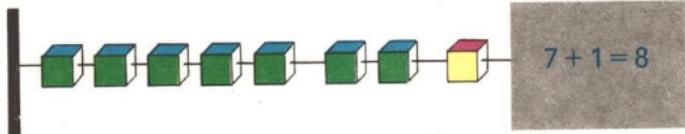
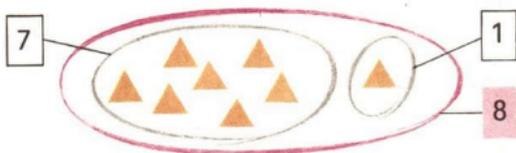
$6 + 1 = 7$ Der Nachfolger von 6 ist 7.

1, 2, 3, 4, 5, 6, 7, ...



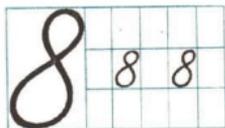


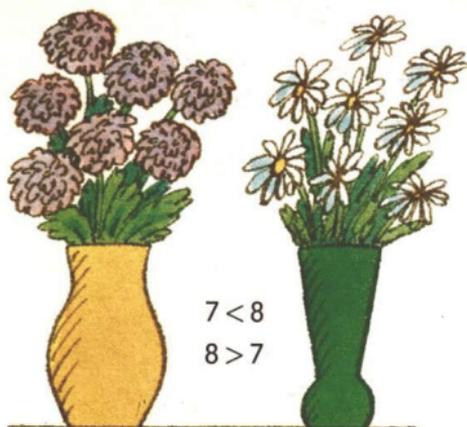
8



$7 + 1 = 8$ · Der Nachfolger von 7 ist 8.

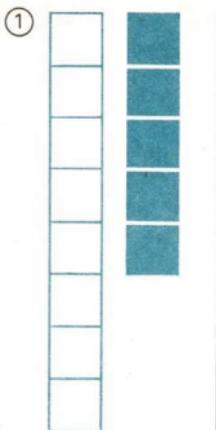
1, 2, 3, 4, 5, 6, 7, 8, ...





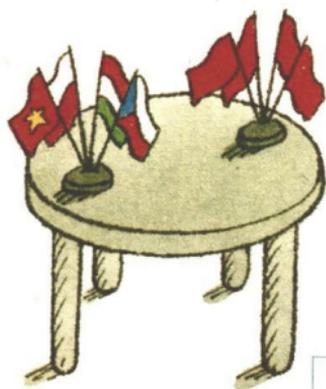
$$7 < 8$$

$$8 > 7$$

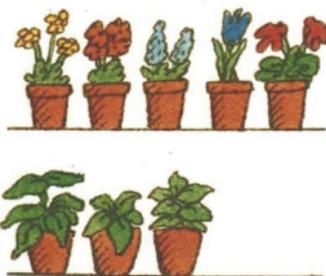
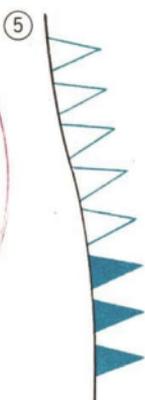
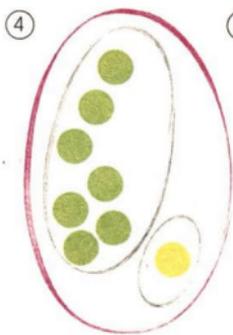


- ②
- | | |
|---|---|
| 3 | 8 |
| 7 | 6 |
| 8 | 5 |
| 4 | 8 |

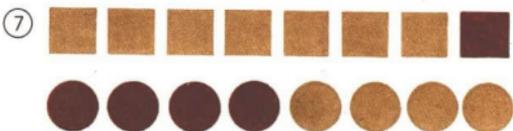
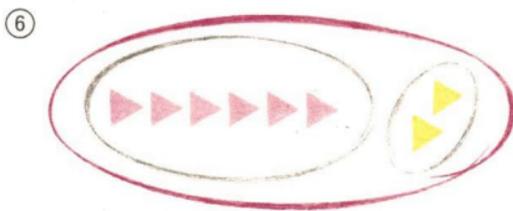
- ③
- | | |
|---|---|
| 5 | 6 |
| 8 | 8 |
| 2 | 8 |
| 5 | 3 |



$$4 + 4 = 8$$

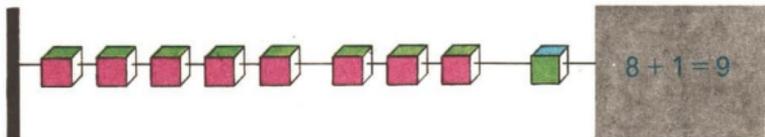
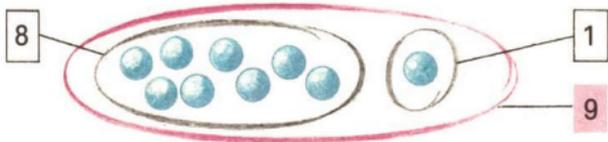


$$8 = 5 + 3$$



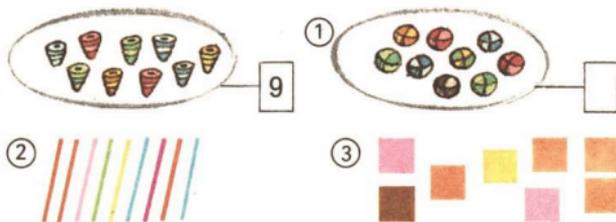


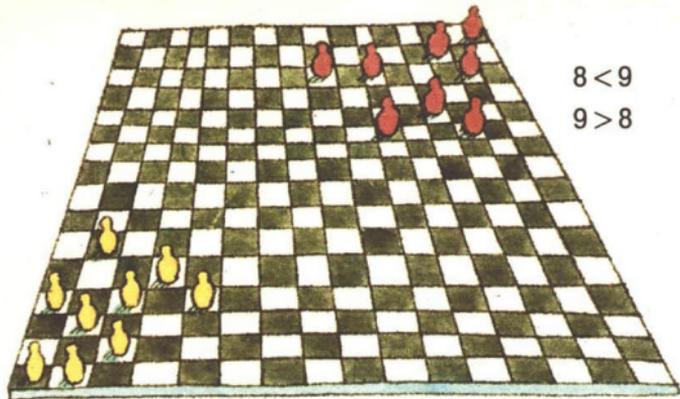
9



$8 + 1 = 9$ Der Nachfolger von 8 ist 9.
 1, 2, 3, 4, 5, 6, 7, 8, 9, ...

9 9 9





$8 < 9$

$9 > 8$

② 4 9

9 7

6 9

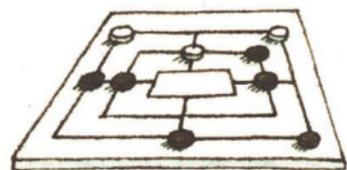
9 9

③ 5 9

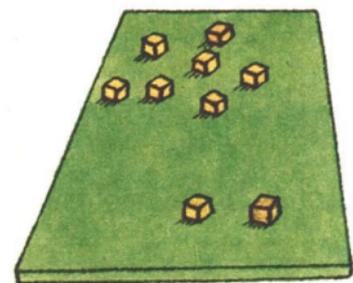
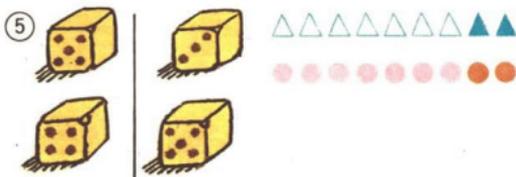
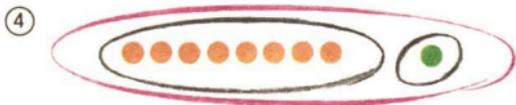
7 4

3 8

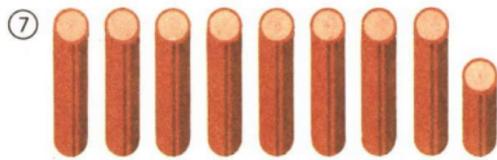
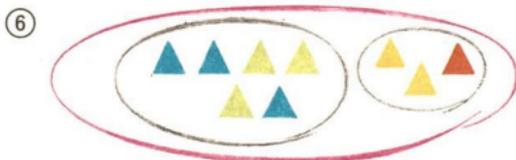
9 1

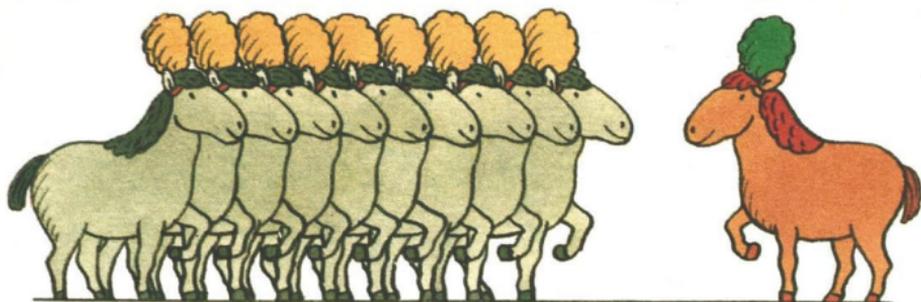


$6 + 3 = 9$

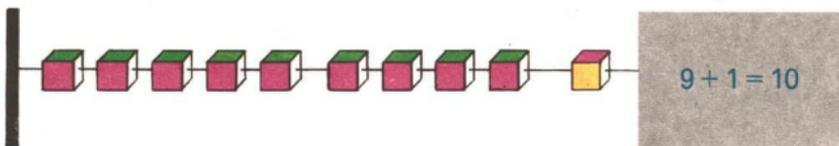


$9 = 7 + 2$

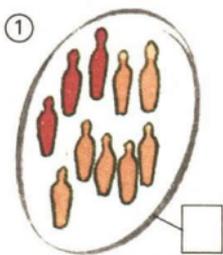
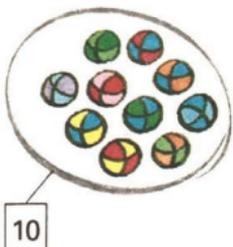
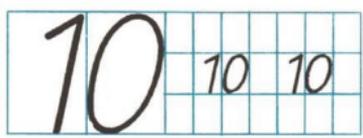


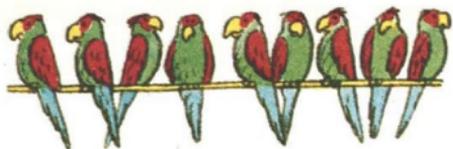


10



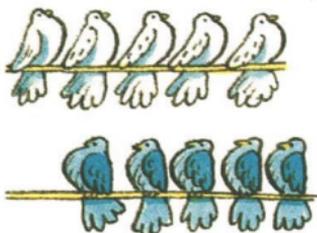
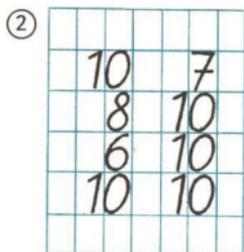
$9 + 1 = 10$ Der Nachfolger von 9 ist 10.
 1, 2, 3, 4, 5, 6, 7, 8, 9, 10



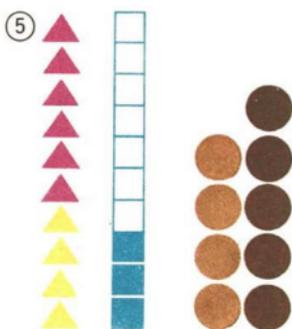
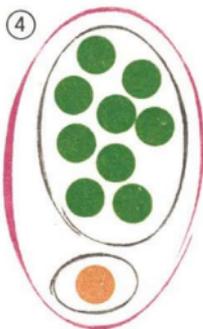


$9 < 10$

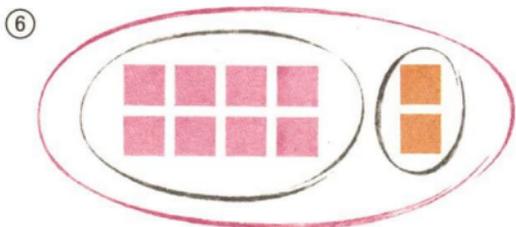
$10 > 9$



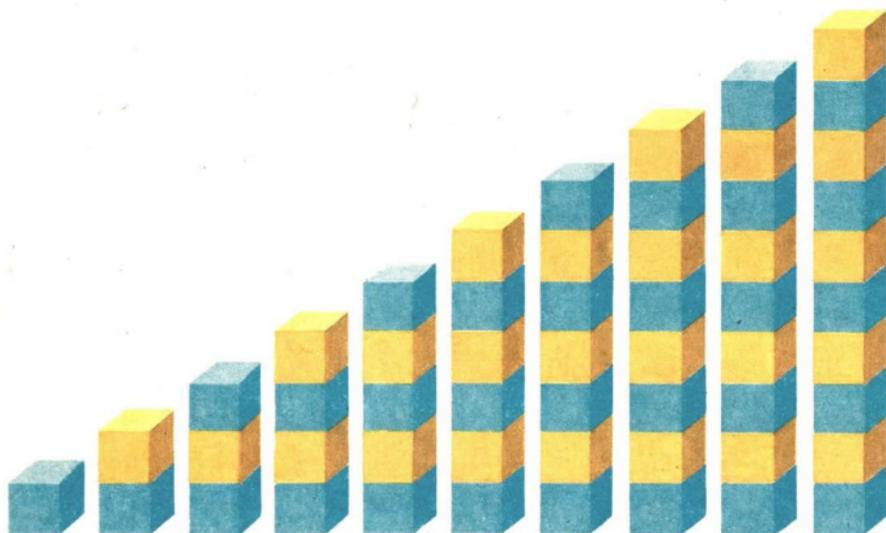
$5 + 5 = 10$



$10 = 6 + 4$

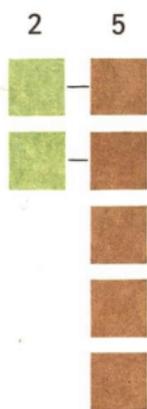


Die Ordnung der Zahlen von 1 bis 10

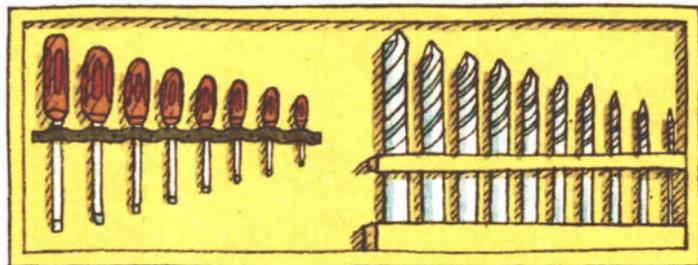


1 < 2 2 < 3 3 < 4 4 < 5 5 < 6 6 < 7 7 < 8 8 < 9 9 < 10

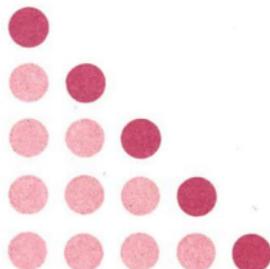
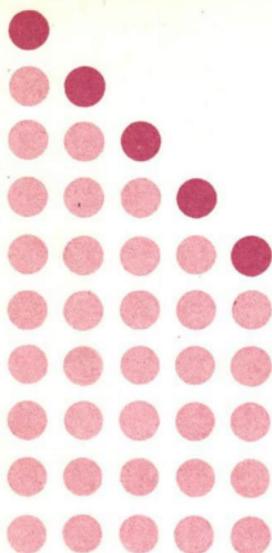
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, ...



①	2 8	②	9 5	③	4 2	④	1 7
	4 3		1 4		1 3		4 4
	6 2		3 3		4 8		2 9
	5 2		10 4		10 2		8 9



2 < 5



1

$1+1=2$

$2+1=3$

$3+1$

$4+1$

$5+1$

$6+1$

$7+1$

$8+1$

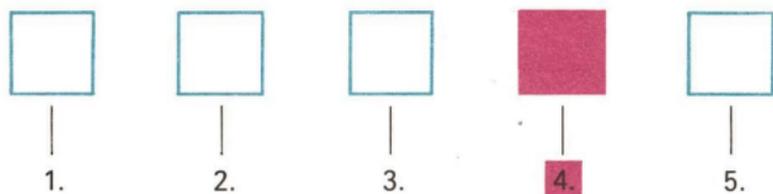
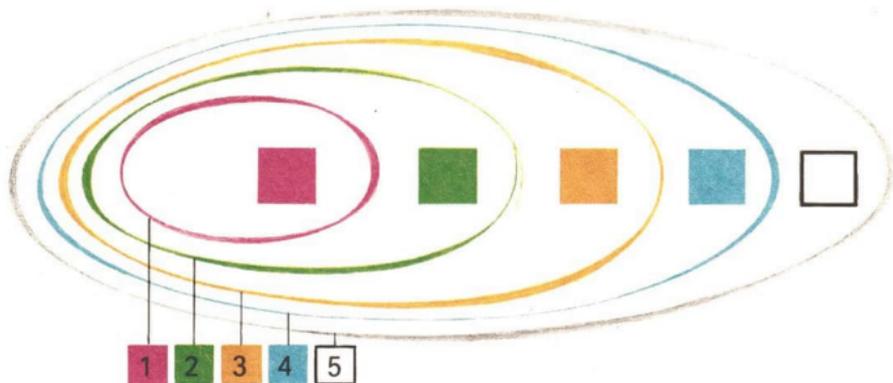
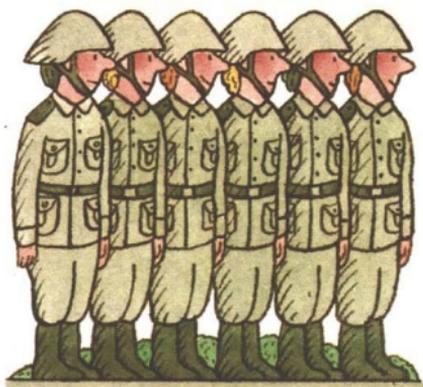
$9+1$



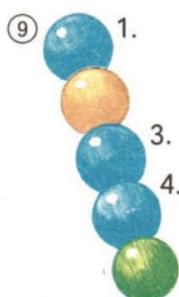
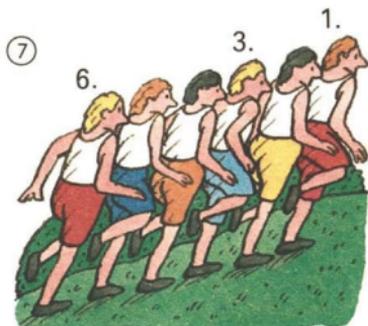
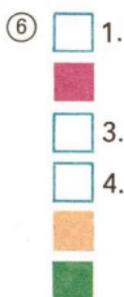
Der Vorgänger von 7
ist 6.

Der Nachfolger von 6
ist 7.

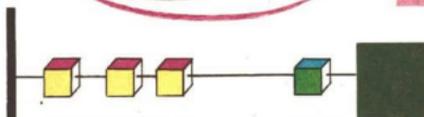
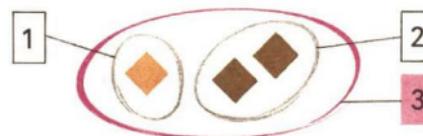
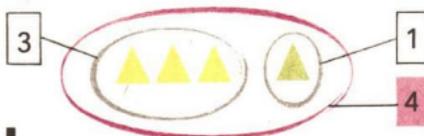
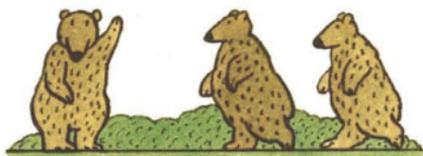
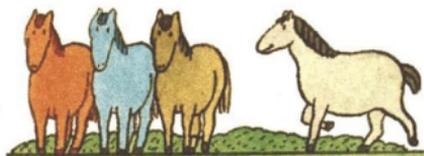




Der erste Ball ist rot.
Der dritte Ball ist blau.



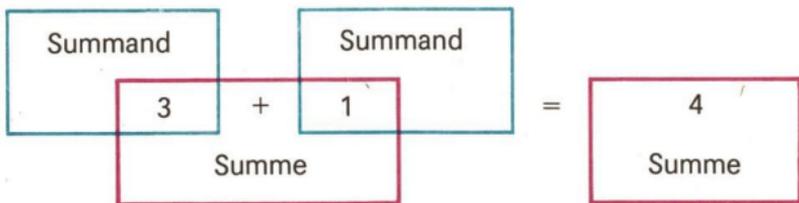
Addieren



$$3 + 1 = 4$$

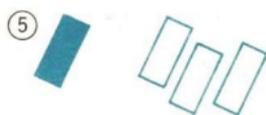
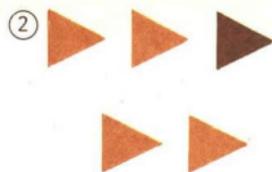
$$1 + 2 = 3$$

$3 + 1 = 4$ ist eine Gleichung.





$2+2=4$



$1+4$



$1+4=5$

Rechnel $2+3$

$2+3=5$

Merke! $2+3=5$

$① 1+1$

$2+1$

$3+1$

$② 2+2$

$1+4$

$2+3$

$③ 3+1$

$1+2$

$4+1$

$④ 1+1 \mid 1+3 \mid 3+2 \mid 2+1 \mid 2+3$

$1+1=2$	$1+2=3$	$1+3=4$	$1+4=5$
	$2+1=3$	$2+2=4$	$2+3=5$
		$3+1=4$	$3+2=5$
			$4+1=5$

$⑤ 1+1 \mid ⑥ 1+2 \mid ⑦ 1+3 \quad 1+4$

$2+1$

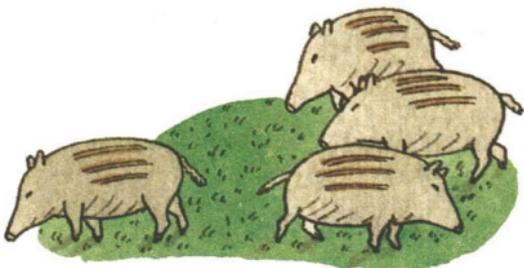
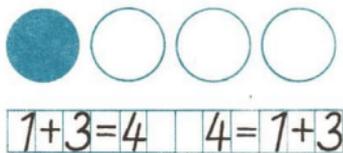
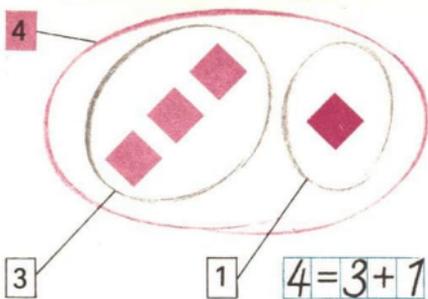
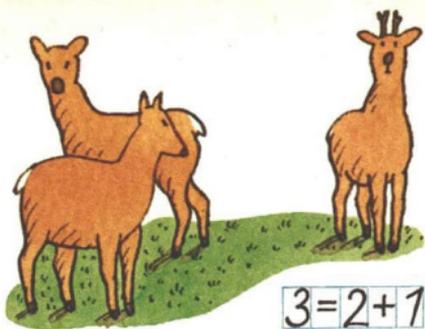
$2+2$

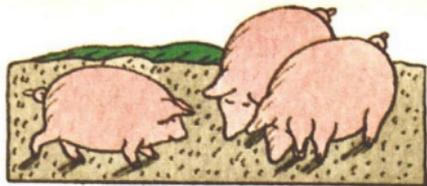
$2+3$

$3+1$

$3+2$

$4+1$





$$2 + 1 = 3$$

$$2 + 1 = 1 + 2$$

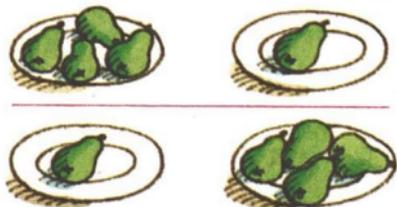
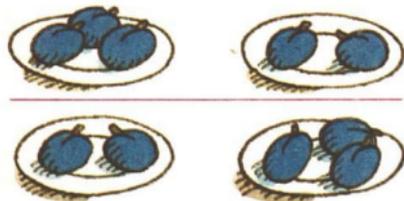
$$1 + 2 = 3$$



$$3 + 1 = 4$$

$$3 + 1 = 1 + 3$$

$$1 + 3 = 4$$



$$3 + 2 = 5$$

$$2 + 3 = 5$$

$$4 + 1 = 5$$

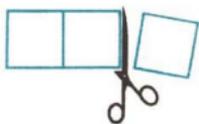
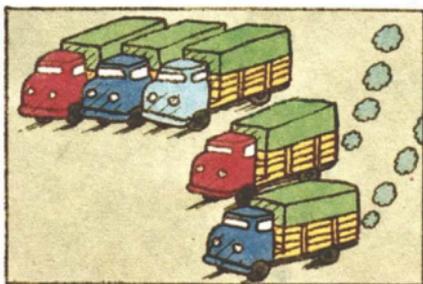
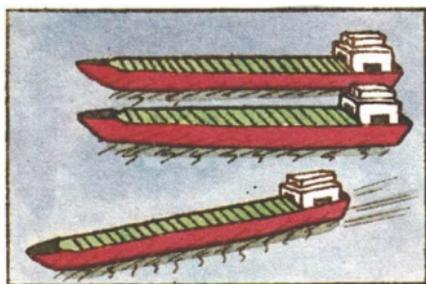
$$1 + 4 = 5$$

Summanden kann man vertauschen; die Summe ist gleich.

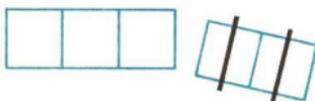
①	$2 + 1$	②	$4 + 1$	③	$3 + 1$	④	$2 + 3$
	$1 + 2$		$1 + 4$		$1 + 3$		$3 + 2$

⑤	$1 + 1$	⑥	$2 + 2$	⑦	$1 + 1$	⑧	$2 + 2$
	$2 + 1$		$3 + 2$		$1 + 2$		$2 + 3$
	$3 + 1$				$1 + 3$		
	$4 + 1$				$1 + 4$		

Subtrahieren



$$3 - 1 = 2$$



$$5 - 2 = 3$$

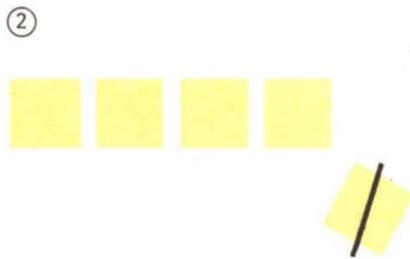
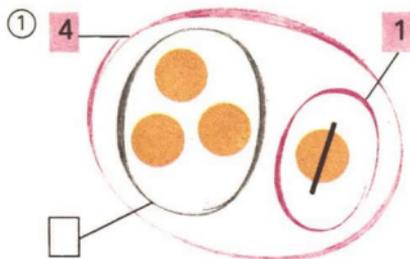
$$3 - 1 = 2$$

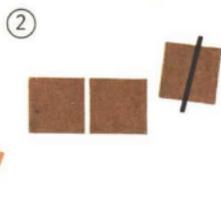
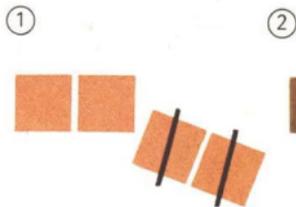
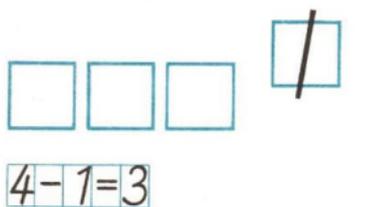
$$5 - 2 = 3$$

Das sind Gleichungen.

— Das ist das Zeichen für „minus“.

3 - 1	=	2
Differenz		Differenz





$3 - 2 = 1$

Rechne!	4 - 1
	<p>3 $4 - 1 = 3$</p>
Merke!	4 - 1 = 3

- ① $3 - 2$
 $4 - 1$
 $5 - 2$
- ② $2 - 1$
 $4 - 2$
 $5 - 3$
- ③ $5 - 1$
 $4 - 3$
 $3 - 1$

④ $3 - 2$ | $4 - 2$ | $5 - 2$ | $3 - 1$

$2 - 1 = 1$	$3 - 1 = 2$	$4 - 1 = 3$	$5 - 1 = 4$
	$3 - 2 = 1$	$4 - 2 = 2$	$5 - 2 = 3$
		$4 - 3 = 1$	$5 - 3 = 2$
			$5 - 4 = 1$

⑤ $2 - 1$
 $3 - 1$
 $4 - 1$
 $5 - 1$

⑥ $3 - 2$
 $4 - 2$
 $5 - 2$

⑦ $4 - 3$
 $5 - 3$ $5 - 4$

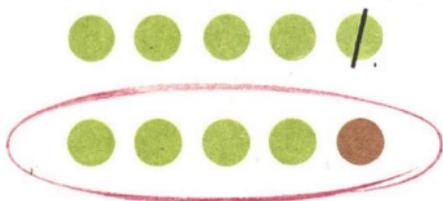
Addieren und Subtrahieren



$$3 - 1 = 2$$

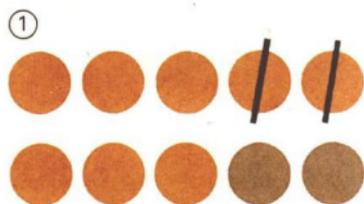


$$2 + 1 = 3$$



$$5 - 1 = 4$$

$$4 + 1 = 5$$



$$4 - 2 = 2$$

$$2 + 2 = 4$$



$4 - 1 = 3$

① $3 - 1$

$2 - 1$

② $4 - 3$

$5 - 4$

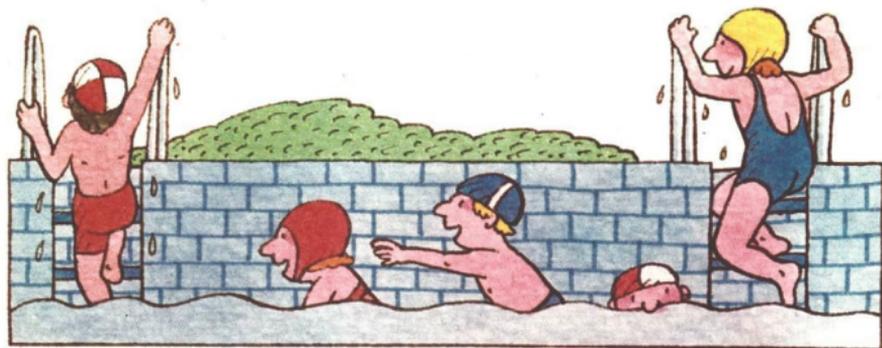
$3 + 1 = 4$

$2 + 1$

$1 + 1$

$3 + 1$

$4 + 1$



$5 - 2 = 3$
$3 + 2 = 5$

③ $2 - 1$

$5 - 4$

$3 - 2$

④ $4 - 3$

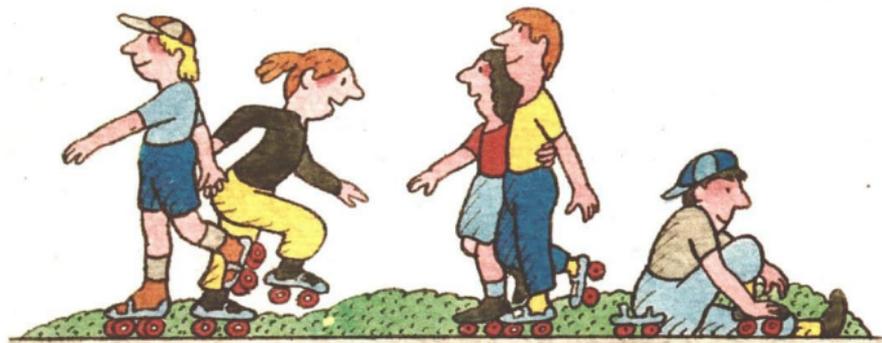
$5 - 4$

$5 - 3$

⑤ $5 - 3$

$5 - 1$

$4 - 1$



$3 < 10$
$5 = 5$
$8 > 6$

⑥ $10 \quad 5$

$10 \quad 6$

$10 \quad 2$

⑦ $3 \quad 10$

$4 \quad 10$

$7 \quad 10$

⑧ $6 \quad 2$

$4 \quad 4$

$7 \quad 9$

⑨ $9 \quad 10$

$8 \quad 2$

$8 \quad 8$

$2 + 3 = 5$
$3 + 2 = 5$

⑩ $1 + 2$

$1 + 4$

$3 + 1$

$$\begin{array}{l} 5-1=4 \\ 5-2=3 \\ 5-3=2 \\ 5-4=1 \\ 5-5=0 \end{array}$$

$$\begin{array}{l} 4-1=3 \\ 4-2=2 \\ 4-3=1 \\ 4-4=0 \end{array}$$

$$\begin{array}{l} 3-1=2 \\ 3-2=1 \\ 3-3=0 \end{array}$$

$$\begin{array}{l} 2-1=1 \\ 2-2=0 \end{array}$$

$$1-1=0$$



$0 < 1$	$1 > 0$	$1+0=1$	$1-0=1$
$0 < 2$	$2 > 0$	$2+0=2$	$2-0=2$
$0 < 3$		3	3
$0 < 4$		4	4
$0 < 5$		5	5

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

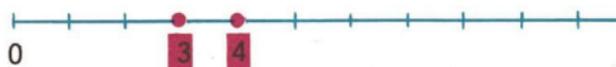
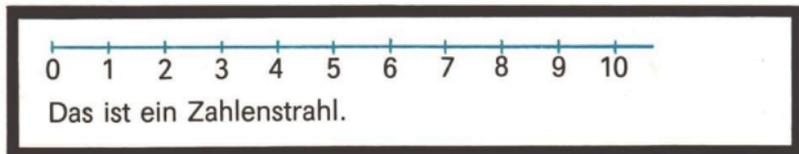
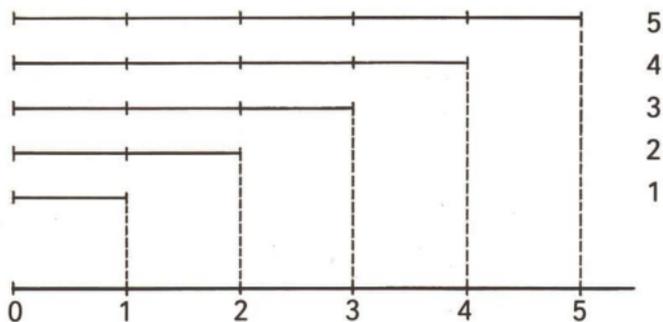
① $0 < 2$

0 5 3 0 1 0 0 4

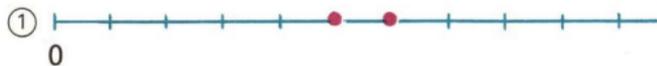
$0+1=1$	$0+2=2$	$0+3=3$	$0+4=4$	$0+5=5$
$1+0=1$	$1+1=2$	$1+2=3$	$1+3=4$	$1+4=5$
	$2+0=2$	$2+1=3$	$2+2=4$	$2+3=5$
		$3+0=3$	$3+1=4$	$3+2=5$
			$4+0=4$	$4+1=5$
				$5+0=5$

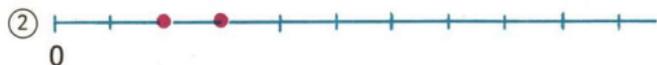
$1-0=1$	$2-0=2$	$3-0=3$	$4-0=4$	$5-0=5$
$1-1=0$	$2-1=1$	$3-1=2$	$4-1=3$	$5-1=4$
	$2-2=0$	$3-2=1$	$4-2=2$	$5-2=3$
		$3-3=0$	$4-3=1$	$5-3=2$
			$4-4=0$	$5-4=1$
				$5-5=0$

② $1+0$ $0+3$ $4+0$ $0+5$ $0+2$ $0+0$



$3 < 4$







$9 > 8$

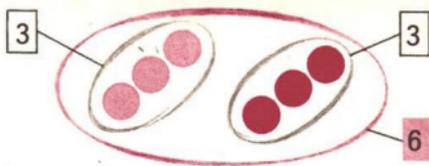


- ④ 2 3 | ⑤ 7 8 | ⑥ 4 3 | ⑦ 9 8 | ⑧ 3 4
 1 2 | 9 10 | 1 0 | 6 5 | 8 7

⑨ $0 < 1$, $1 < 2$, ... , $9 < 10$

⑩ $10 > 9$, $9 > 8$, ... , $1 > 0$





$4 + 2 = 6$

$3 + 3 = 6$

$2 + 4 = 6$

$4 + 2$

$3 + 3$

$4 + 2 = 6$

$5 + 1$

$2 + 4 = 6$

$1 + 5$

$6 + 0$

$0 + 6$

6

$4 + 2$	$2 + 4$	$5 + 1$	$6 + 0$
$3 + 3$		$1 + 5$	$0 + 6$

① $4 + 2$ ② $0 + 4$ ③ $1 + 5$ ④ $4 + 1$ ⑤ $0 + 6$

$1 + 3$ $5 + 1$ $2 + 3$ $0 + 3$ $1 + 1$

$5 + 0$ $1 + 4$ $3 + 1$ $2 + 2$ $2 + 1$

$3 + 3$ $3 + 2$ $3 + 0$ $6 + 0$ $2 + 4$

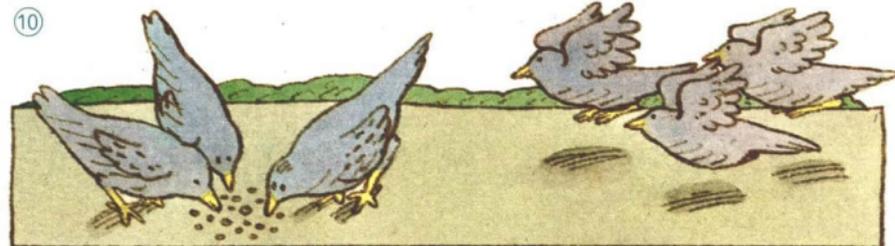
① $1 + 0$ ② $2 + 1$ ③ $2 + 2$ ④ $1 + 3$ ⑤ $0 + 4$ ⑥ $0 + 5$

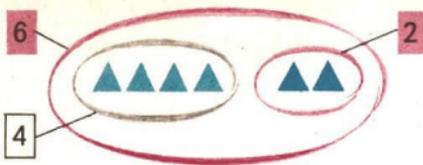
$4 + 0$ $3 + 1$ $3 + 2$ $2 + 3$ $1 + 4$ $1 + 5$

$6 + 0$ $5 + 1$ $4 + 2$ $3 + 3$ $2 + 4$ $0 + 6$

⑦ $4 + 2$ | $3 + 1$ ⑧ $5 + 1$ | $2 + 1$ ⑨ $4 + 1$ | $3 + 2$

$2 + 4$ | $1 + 3$ $1 + 5$ | $1 + 2$ $1 + 4$ | $2 + 3$





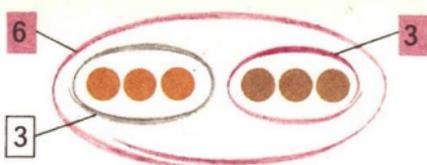
$$6 - 2 = 4$$

$$6 - 2$$



$$6 - 2 = 4$$

$$6 - 4 = 2$$



$$6 - 3 = 3$$

$$6 - 3$$



$$6 - 1 \quad 6 - 0$$

$$6 - 5$$

$$6 - 6$$

$6 - 2$	$6 - 4$	$6 - 1$	$6 - 0$
$6 - 3$		$6 - 5$	$6 - 6$

$$6 - 2$$



$$\begin{array}{|c|c|} \hline 6-2=4 \\ \hline 4+2=6 \\ \hline \end{array}$$

$$6 - 2 = 4$$

$$4 + 2 = 6$$

$$\textcircled{2} \quad 6 - 3$$

$$6 - 1$$

$$6 - 5$$

$$6 - 4$$

$$6 - 6$$

$$\textcircled{3} \quad 4 - 3$$

$$2 - 1$$

$$6 - 0$$

$$5 - 3$$

$$6 - 2$$

$$\textcircled{1} \quad 6 - 0$$

$$6 - 1$$

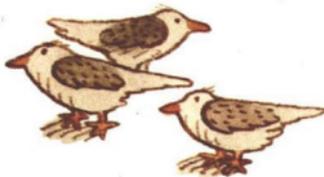
$$6 - 2$$

$$6 - 3$$

$$6 - 4$$

$$6 - 5$$

$$6 - 6$$



$\begin{array}{r} 6 - 4 \\ \hline 4 + 2 = 6 \\ \text{oder} \\ 2 + 4 = 6 \\ \hline 6 - 4 = 2 \end{array}$
--

$$\begin{array}{|c|c|} \hline 6-4=2 \\ \hline \end{array}$$

$$\textcircled{4} \quad 6 - 1$$

$$3 - 2$$

$$5 - 2$$

$$6 - 4$$

$$4 - 2$$

$$\textcircled{5} \quad 3 - 1$$

$$6 - 3$$

$$5 - 4$$

$$4 - 1$$

$$6 - 6$$

$$\textcircled{6} \quad 6 - 1$$

$$6 - 5$$

$$\textcircled{7} \quad 6 - 2$$

$$6 - 4$$

$$\textcircled{8} \quad 6 - 3$$

$$4 - 2$$

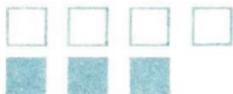
$$\textcircled{9} \quad 5 - 2$$

$$5 - 3$$

$$\textcircled{10} \quad 3 - 1$$

$$3 - 2$$

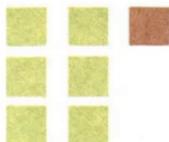
$4 + 3$



$4 + 3 = 7$

$3 + 4 = 7$

$6 + 1$



$5 + 2$



7	$5 + 2$	$2 + 5$	$6 + 1$	$1 + 6$
	$4 + 3$	$3 + 4$	$7 + 0$	$0 + 7$

- ① $2 + 2$ ② $0 + 7$ ③ $6 + 0$ ④ $1 + 4$ ⑤ $6 + 1$
 $5 + 2$ $4 + 1$ $3 + 4$ $7 + 0$ $2 + 3$
 $4 + 0$ $3 + 2$ $0 + 5$ $2 + 5$ $0 + 6$
 $1 + 3$ $1 + 6$ $2 + 4$ $3 + 3$ $4 + 3$

① $7 = 6 + 1$
 $7 = 5 + 2$
 7
 7
 7
 7

② $6 = 5 + 1$
 6
 6
 6
 6

- ③ $4 = 0 + 4$ ④ $3 = 3 + 0$ ⑤ $2 = 0 + 2$
 $4 = 1 + 3$ 3 2
 4 3 2
 4 3
 4



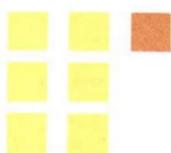
$7-3$



$7-3=4$

$7-4=3$

$7-1$



$7-2$



$7-2$	$7-5$	$7-1$	$7-6$
$7-3$	$7-4$	$7-0$	$7-7$

① $7-0$

$7-1$

$7-2$

$7-3$

$7-4$

$7-5$

$7-6$

$7-7$

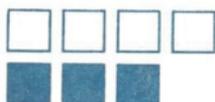
② $7-5$ ③ $4-3$ ④ $7-1$ ⑤ $7-2$

$5-1$ $7-3$ $3-0$ $3-3$

$2-2$ $1-0$ $5-5$ $6-2$

$7-7$ $2-0$ $7-6$ $7-0$

$4+3$



$4+3=7$

$4+3=7$
$3+4=7$
$7-3=4$
$7-4=3$

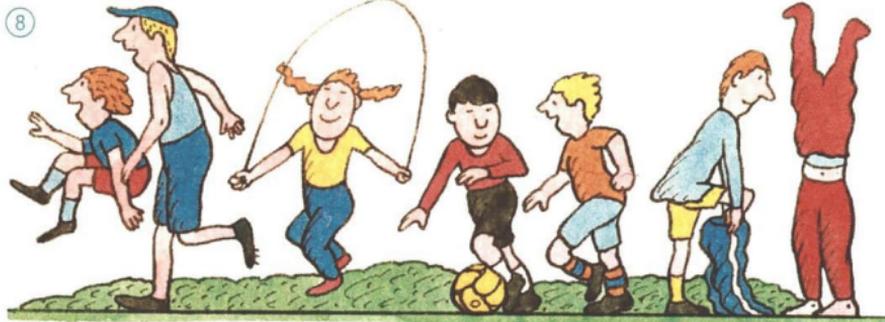
① $6+1$



② $4+2$



③ $3+3$ | ④ $2+1$ | ⑤ $3+2$ | ⑥ $5+1$ | ⑦ $5+2$



Verwenden von Variablen

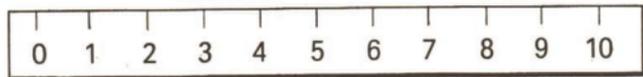
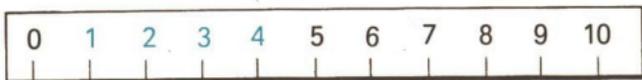
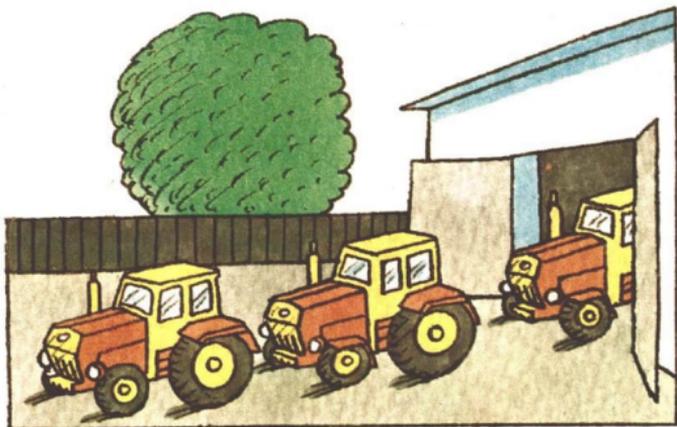
$3 + 2$

$3 + 4$

$3 + 1$

$3 + 3$

$3 + a$



$3 + 1$

$3 + 4$

$3 + 3$

$3 + 2$

Wenn $a=2$, so $3+a=5$

Wenn $a=4$, so $3+a=7$

Wenn $a=1$, so $3+a=4$

$2 + a$; $a=3$, $2 + a = 5$

$a=4$, $2 + a = 6$

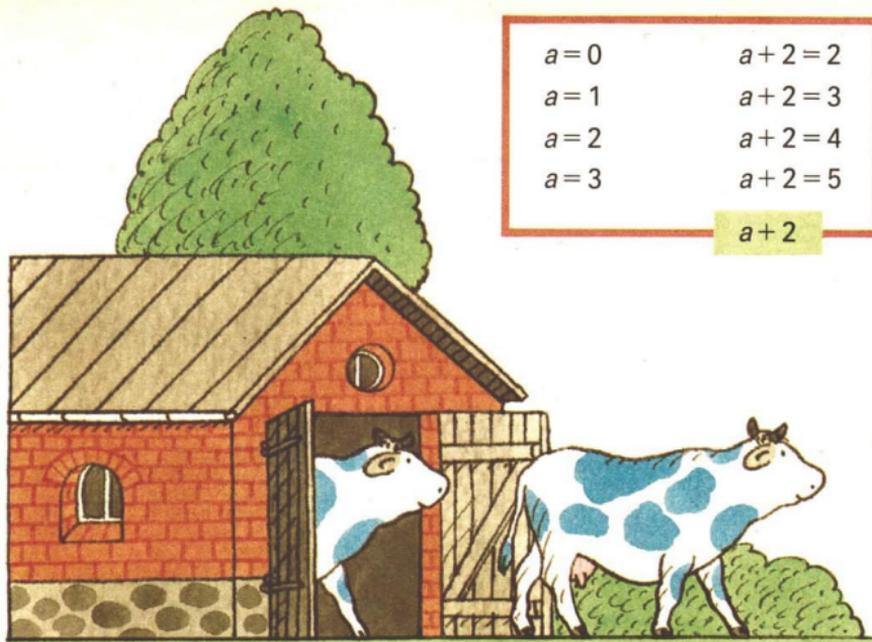
$2 + a$; $a = 1, 2$

2	+	a	=	3
2	+	a	=	4

① $2 + a$; $a = 4$ ② $3 + a$; $a = 1$ ③ $2 + a$; $a = 0, 4, 5$

$1 + e$; $e = 3$ $5 + e$; $e = 2$

$3 + i$; $i = 1$ $2 + i$; $i = 4$ ④ $3 + a$; $a = 1, 4, 2$



$a=0$	$a+2=2$
$a=1$	$a+2=3$
$a=2$	$a+2=4$
$a=3$	$a+2=5$
	$a+2$

- ① $a + 3$; $a = 1, 3, 2$ ② $a + 4$; $a = 1, 3, 0$ ③ $a + 1$; $a = 0, 1, 5$

$a-2$	
$a=7$	$a-2=5$
$a=6$	$a-2=4$
$a=5$	$a-2=3$
$a=4$	$a-2=2$

- ④ $a-3$; $a = 5, 4, 7$
 ⑤ $a-1$; $a = 1, 2, 3$
 ⑥ $a-5$; $a = 6, 7, 5$

$7-a$	
$a=2$	$7-a=5$
$a=3$	$7-a=4$
$a=4$	$7-a=3$
$a=5$	$7-a=2$

- ⑦ $5-a$; $a = 3, 1, 4$
 ⑧ $6-a$; $a = 4, 6, 2$
 ⑨ $4-a$; $a = 2, 0, 3$



$6 + 2$



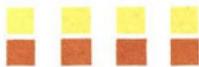
$6 + 2 = 8$

$2 + 6 = 8$

$8 - 2 = 6$

$8 - 6 = 2$

$4 + 4$



$5 + 3$



	$6 + 2$	$2 + 6$	$8 - 2$	$8 - 6$
	$5 + 3$	$3 + 5$	$8 - 3$	$8 - 5$
	$4 + 4$		$8 - 4$	
	$7 + 1$	$1 + 7$	$8 - 1$	$8 - 7$
	$8 + 0$	$0 + 8$	$8 - 0$	$8 - 8$

$① 2 + 5$

$② 4 + 3$

$③ 5 + 2$

$4 + 4$

$1 + 4$

$2 + 6$

$1 + 1$

$8 + 0$

$7 + 0$

$0 + 8$



$④ 0 + 3$

$⑤ 1 + 7$

$3 + 4$

$0 + 0$

$7 + 1$

$0 + 7$

$3 + 5$

$6 + 2$

$⑥ 8 - 8$

$4 - 2$

$5 - 5$

$8 - 1$



$⑦ 5 - 4$

$7 - 3$

$8 - 5$

$7 - 0$

$⑧ 8 - 3$

$8 - 0$

$7 - 7$

$7 - 5$

$⑨ 8 - 4$

$4 - 4$

$8 - 2$

$5 - 0$

$⑩ 0 - 0$

$8 - 7$

$8 - 6$

$7 - 4$

$① 5 + 3$

$3 + 5$

$8 - 3$

$8 - 5$

$② 6 + 1$

$③ 4 + 3$

$④ 6 + 2$

$⑤ 3 + 2$

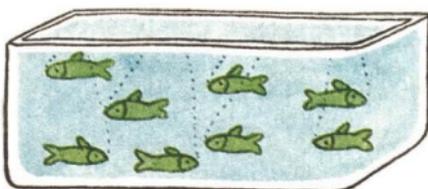
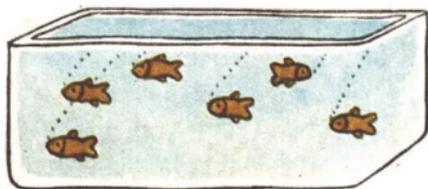


① $3 + 3$	② $7 - 4$	③ $5 + 3$	④ $7 - 7$	⑤ $6 - 0$
$8 - 5$	$4 + 4$	$2 + 5$	$8 - 6$	$7 + 1$
$8 + 0$	$8 - 3$	$8 - 1$	$0 + 5$	$5 + 2$
$6 - 6$	$0 + 6$	$5 - 4$	$2 + 6$	$8 - 2$

⑥ $2 + 2$	⑦ $6 - 2$	⑧ $1 + 1$	⑨ $4 + 1$	⑩ $8 - 1$
$5 + 2$	$2 - 2$	$2 + 2$	$4 + 2$	$8 - 2$
$1 + 2$	$5 - 2$	$3 + 3$	$4 + 3$	$8 - 3$
$6 + 2$	$8 - 2$	$4 + 4$	$4 + 4$	$8 - 4$

① ○○○○○○●● $8 = 7 + 1$
 ○○○○○○●● $8 = 6 + 2$
 ○○○○○●●● 8
 ○○○○○●●● 8

○○●●●●●● 8
 ○●●●●●●● 8
 ○●●●●●●● 8



$6 < 8$	$6 + 2 = 8$
$4 < 7$	$4 + 3 = 7$
$3 < 6$	$3 + 3 = 6$

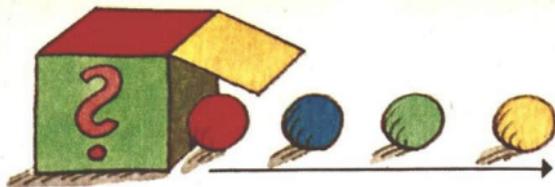
$8 > 6$	$6 + 2 = 8$
$7 > 4$	$4 + 3 = 7$
$6 > 3$	$3 + 3 = 6$

② $5 \quad 8$	③ $2 \quad 5$	④ $3 \quad 8$
$2 \quad 4$	$1 \quad 7$	$0 \quad 3$
$3 \quad 7$	$4 \quad 6$	$4 \quad 8$

⑤ $8 \quad 5$	⑥ $5 \quad 0$	⑦ $8 \quad 3$
$4 \quad 2$	$7 \quad 1$	$3 \quad 1$
$7 \quad 3$	$6 \quad 4$	$8 \quad 4$

⑧ $a + 5$; $a = 1, 0, 3$
 $a + 4$; $a = 3, 4, 2$
 $a + 6$; $a = 2, 0, 1$

⑨ $8 - a$; $a = 2, 7, 5$
 $5 - a$; $a = 1, 5, 0$
 $7 - a$; $a = 6, 3, 4$



$$e + 4$$

Wenn $e = 3$, so $e + 4 = 7$

Wenn $e = 1$, so $e + 4 = 5$

Wenn $e = 4$, so $e + 4 = 8$

Wenn $e = 2$, so $e + 4 = 6$

e	$e + 4$
3	7
1	5
4	8
2	6

$$i - 4$$

Wenn $i = 8$, so $i - 4 = 4$

Wenn $i = 5$, so $i - 4 = 1$

Wenn $i = 6$, so $i - 4 = 2$

Wenn $i = 4$, so $i - 4 = 0$

i	$i - 4$
8	4
5	1
6	2
4	0

a	$a + 3$
3	6
2	5
0	3
1	4
4	7

①

e	$e + 2$
3	
4	
1	
0	
5	

②

i	$i + 1$
6	
1	
5	
3	
2	

③

u	$u + 3$
1	
2	
0	
4	
5	

a	$a - 3$
8	5
2	—
3	0
1	—
5	2

④

a	$a - 4$
6	
4	
7	
5	
8	

⑤

e	$e - 2$
7	
1	
5	
0	
3	

⑥

a	$7 - a$
5	
2	
8	
7	
3	

$$3 + a = 5$$

$$a = 2$$



$$\begin{array}{|c|c|} \hline 5 + a = 7 \\ \hline a = 2 \\ \hline \end{array}$$

$$\begin{array}{|c|c|} \hline 5 - i = 3 \\ \hline i = 2 \\ \hline \end{array}$$

- ① $3 + i = 6$ ② $7 - a = 5$ ③ $7 + e = 8$ ④ $8 - i = 4$
 $2 + e = 3$ $8 - e = 6$ $4 + a = 6$ $6 - a = 2$
 $5 + a = 8$ $4 - i = 1$ $5 + e = 8$ $7 - e = 3$
 $1 + i = 2$ $5 - a = 0$ $2 + i = 6$ $7 - i = 7$
 $6 + e = 8$ $8 - e = 8$ $2 + a = 7$ $8 - e = 5$



$$\begin{array}{|c|c|} \hline a + 5 = 6 \\ \hline a = 1 \\ \hline \end{array}$$
$$\begin{array}{|c|c|} \hline e - 5 = 3 \\ \hline e = 8 \\ \hline \end{array}$$

- ⑤ $a + 3 = 5$ ⑥ $e - 3 = 5$ ⑦ $i + 5 = 7$
 $e + 1 = 8$ $i - 4 = 2$ $u + 3 = 8$
 $i + 5 = 6$ $u - 6 = 1$ $a - 1 = 4$
 $u + 7 = 8$ $a - 2 = 3$ $e - 6 = 2$
 $a + 2 = 2$ $e - 7 = 1$ $i + 4 = 8$

$6+3$



$6+3=9$

$3+6=9$

$9-3=6$

$9-6=3$

$7+2$



$5+4$

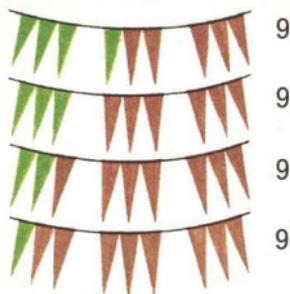
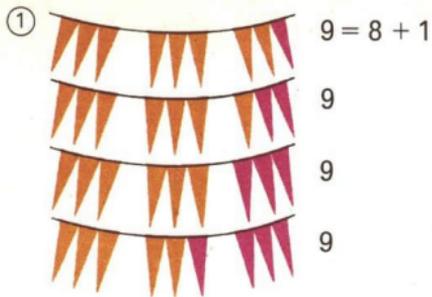


9	$7+2$	$2+7$	$9-2$	$9-7$
	$6+3$	$3+6$	$9-3$	$9-6$
	$5+4$	$4+5$	$9-4$	$9-5$
	$8+1$	$1+8$	$9-1$	$9-8$
	$9+0$	$0+9$	$9-0$	$9-9$

- ① $6+2$ ② $2+5$ ③ $9-4$ ④ $8-4$ ⑤ $6+3$ ⑥ $9-5$
 $4+5$ $5+4$ $8-8$ $9-0$ $9-6$ $2+7$
 $1+2$ $1+8$ $5-4$ $4-3$ $8-7$ $6-6$
 $0+9$ $3+4$ $9-1$ $9-8$ $0+8$ $9+0$



- ③ $9-3$ ④ $2+6$ ⑤ $9-7$ ⑥ $9-5$ ⑦ $0+6$ ⑧ $9-4$
 $5+3$ $8-1$ $2+7$ $8-5$ $1+6$ $8-4$
 $8+1$ $9+0$ $9-2$ $7-5$ $2+6$ $7-4$
 $9-9$ $5-5$ $7+2$ $6-5$ $3+6$ $6-4$



②

Summe 9	
5+4=9	
2+7	

③

Summe 7	
6+1=7	

④

Summe 8	

⑤

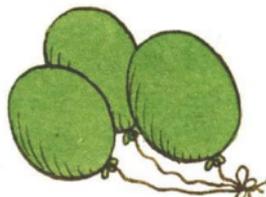
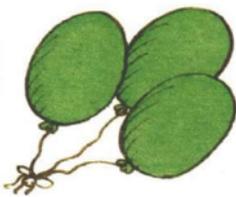
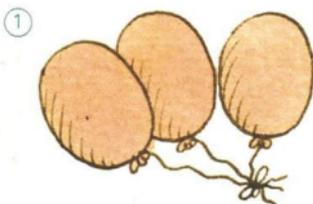
Summe 6	

⑥

Summe 4	

⑦

Summe 5	



② $9 - 6$

③ $9 - 2$

④ $8 + 1$

⑤ $5 + 4$

⑥ $6 + 3$

$9 - 4$

$9 - 8$

$1 + 8$

$9 - 7$

$9 - 5$

$9 - 1$

$9 - 9$

$9 - 3$

$9 - 8$

⑦

a	$9 - a$
3	
7	
9	

⑧

e	$e - 5$
9	
6	
8	

⑨ $a + 3 = 5$

⑩ $e - 3 = 5$

$e + 4 = 9$

$i - 2 = 7$

$i + 6 = 7$

$a - 5 = 2$

$u + 2 = 9$

$e - 9 = 0$

$a + 1 = 6$

$u - 1 = 4$

$$\begin{array}{|c|c|} \hline 0 < 3 \\ \hline 1 < 3 \\ \hline 2 < 3 \\ \hline \end{array}$$

$$\begin{array}{|c|c|} \hline 4 > 0 \\ \hline 4 > 1 \\ \hline 4 > 2 \\ \hline 4 > 3 \\ \hline \end{array}$$

①	0	5	②	6	0	③	0	7	④	8	0
	1	5		6	1		1	7		8	1
	2	5		6	2		2	7		8	2
	3	5		6	3		3	7		8	3
	4	5		6	4		4	7		8	4
				6	5		5	7		8	5
							6	7		8	6
										8	7

$4 < 5$; $6 > 5$ sind Ungleichungen.

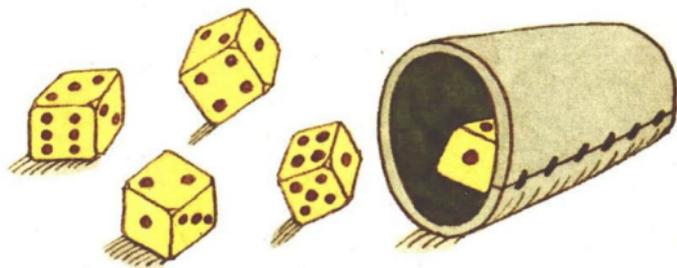
$$\begin{array}{|c|c|} \hline 5 < 7; 5 + 2 = 7 \\ \hline 4 < 5; 4 + 1 = 5 \\ \hline 6 < 9; 6 + 3 = 9 \\ \hline \end{array}$$

⑤	3	8	3	4	⑥	2	4	2	9
	4	7		2	6		1	6	7
	5	9		4	8		5	8	6

$$\begin{array}{|c|c|} \hline 7 > 5; 5 + 2 = 7 \\ \hline 5 > 4; 4 + 1 = 5 \\ \hline 9 > 6; 6 + 3 = 9 \\ \hline \end{array}$$

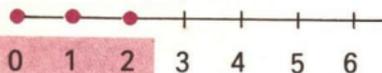
⑦	8	3	4	3	⑧	7	2	9	5
	7	4		8	2		9	8	8
	9	5		9	7		8	3	9

$$5 + a = 9$$



①	$3 + i = 6$	②	$u - 7 = 2$	③	$a + 6 = 9$	④	$5 - e = 1$
	$2 + u = 5$		$a - 9 = 0$		$a + 6 = 8$		$7 - i = 0$
	$5 + a = 8$		$e - 3 = 1$		$i + 7 = 9$		$8 - u = 2$
	$1 + e = 4$		$i - 3 = 6$		$u + 6 = 6$		$9 - a = 8$
	$5 + i = 9$		$u - 2 = 7$		$a + 3 = 9$		$9 - e = 4$

$a < 3$

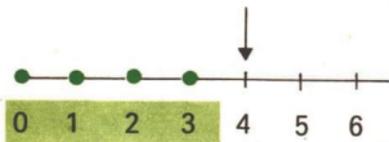


$$a < 3$$

$$a = 0, 1, 2$$

$$4 > a$$

$$a = 0, 1, 2, 3$$

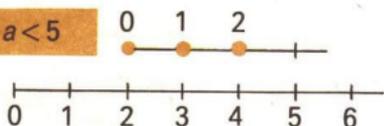


$$\textcircled{1} \begin{aligned} a < 2 \\ e < 5 \\ i < 3 \\ u < 4 \\ a < 1 \end{aligned}$$



$$\textcircled{2} \begin{aligned} 4 > e \\ 3 > i \\ 5 > u \\ 1 > a \\ 2 > e \end{aligned} \quad \textcircled{3} \begin{aligned} i < 2 \\ u < 5 \\ 3 > a \\ 4 > e \\ i < 1 \end{aligned}$$

$2 + a < 5$



$$2 + a < 5$$

$$a = 0, 1, 2$$

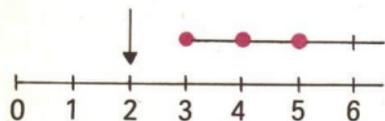
$$\textcircled{4} \begin{aligned} 2 + e < 5 \\ 5 + i < 7 \\ 3 + u < 6 \end{aligned} \quad \textcircled{5} \begin{aligned} 1 + a < 5 \\ 0 + e < 3 \\ 4 + i < 8 \end{aligned}$$



$$5 - e > 2$$

$$e = 0, 1, 2$$

$$\textcircled{6} \begin{aligned} 8 - i > 4 \\ 7 - u > 5 \\ 6 - a > 3 \end{aligned} \quad \textcircled{7} \begin{aligned} 9 - e > 6 \\ 8 - i > 5 \\ 7 - u > 3 \end{aligned}$$



$$\textcircled{8} \begin{aligned} 2 + a < 5 \\ 6 + e < 9 \\ 9 - i > 7 \end{aligned} \quad \textcircled{9} \begin{aligned} 6 - i > 3 \\ 8 - u > 6 \\ 3 + a < 6 \end{aligned}$$

$$\begin{aligned} 4 + 3 &= 7 \\ 7 - 2 &= 5 \\ 6 - 3 &= 3 \\ 5 + 4 &= 9 \end{aligned}$$

$\textcircled{1}$	7	2	5	$\textcircled{2}$	9	2	7	$\textcircled{3}$	4	5	9
	6	2	8		1	4	5		4	4	0
	9	4	5		6	4	2		7	3	4
	3	2	5		6	3	9		7	0	7



$8 + 2$



$$\begin{array}{r} 8 + 2 = 10 \\ \hline 2 + 8 = 10 \end{array}$$

$$10 - 2 = 8$$

$$10 - 8 = 2$$

$5 + 5$



$6 + 4$



$8 + 2$

$2 + 8$

$10 - 2$

$10 - 8$

$7 + 3$

$3 + 7$

$10 - 3$

$10 - 7$

$6 + 4$

$4 + 6$

$10 - 4$

$10 - 6$

$5 + 5$

$10 - 5$

$$\begin{array}{r} 9 + 1 \\ \hline 10 + 0 \end{array}$$

$$\begin{array}{r} 1 + 9 \\ \hline 0 + 10 \end{array}$$

$$\begin{array}{r} 10 - 1 \\ \hline 10 - 0 \end{array}$$

$$\begin{array}{r} 10 - 9 \\ \hline 10 - 10 \end{array}$$

$10 + 0$

$0 + 10$

$10 - 0$

$10 - 10$

$① 4 + 5 \quad ② 5 + 5 \quad ③ 5 - 4 \quad ④ 3 - 0 \quad ⑤ 6 + 4$

$7 + 3 \quad 8 + 0 \quad 10 - 5 \quad 10 - 9 \quad 10 - 7$

$1 + 9 \quad 9 + 1 \quad 10 - 8 \quad 10 - 1 \quad 2 + 8$

$⑥ 2 - 1 \quad ⑦ 9 - 4 \quad ⑧ 0 + 9 \quad ⑨ 7 + 2 \quad ⑩ 1 - 1$

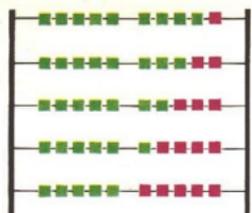
$10 - 3 \quad 10 - 4 \quad 8 + 2 \quad 5 + 0 \quad 4 + 6$

$7 - 4 \quad 8 - 4 \quad 7 + 1 \quad 3 + 7 \quad 10 - 2$

$10 - 6 \quad 4 - 4 \quad 5 + 4 \quad 2 + 6 \quad 1 + 7$

$① 4 - 2 \quad ② 8 - 4 \quad ③ 0 + 0 \quad ④ 2 + 2 \quad ⑤ 4 + 4$

$6 - 3 \quad 10 - 5 \quad 1 + 1 \quad 3 + 3 \quad 5 + 5$



$$10 = 9 + 1$$

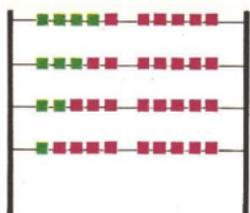
$$10$$

$$10$$

$$10$$

$$10$$

$$10$$



$$10$$

$$10$$

$$10$$

$$10$$

①

- ② $8 = 5 + 3$ ③ $9 = 5 + 4$ ④ $7 + 3$ ⑤ $6 + 4$ ⑥ $8 + 2$

8

8

8

9

9

9

$3 + 7$

$10 - 3$

$10 - 7$

⑦

Differenz	
2	
$5 - 3 = 2$	
$10 - 8$	

⑧

Differenz	
4	
$6 - 2 = 4$	

⑨

Differenz	
1	

Differenz	
6	

⑩

Differenz	
3	

Differenz	
5	

- ① $a < 10$ ② $9 > a$ ③ $6 + a < 8$ ④ $9 - e > 6$

$i < 8$

$5 > u$

$4 + a < 6$

$8 - e > 4$

$e < 6$

$10 > i$

$5 + a < 9$

$10 - e > 7$

$u < 9$

$8 > e$

$7 + a < 10$

$7 - e > 3$

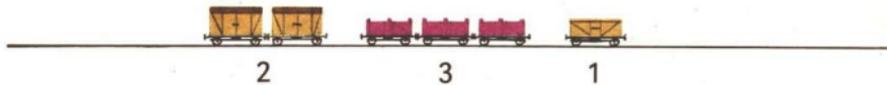
$e < 1$

$1 > a$

⑤



3 Summanden



$2 + 3$

$+ 1$



2

$+ 3 + 1$



$2 + 3$

$+$

1



2

$+$

$3 + 1$

$2 + 3 + 1$

$2 + 3 = 5$

$5 + 1 = 6$

$2 + 3 + 1 = 6$

$2 + 3 + 1$

$3 + 1 = 4$

$2 + 4 = 6$

$2 + 3 + 1 = 6$

Summanden kann man beliebig zusammenfassen.

Die Summe ist gleich.

$2 + 3 + 1 = 6$

$① 2 + 4 + 1$

$② 4 + 3 + 2$

$③ 2 + 5 + 1$

$2 + 4 + 1$

$4 + 3 + 2$

$2 + 5 + 1$

$④ 5 + 2 + 2$

$⑤ 4 + 3 + 3$

$⑥ 5 + 1 + 3$

$⑦ 3 + 3 + 3$

$5 + 2 + 2$

$4 + 3 + 3$

$5 + 1 + 3$

$3 + 3 + 3$

$① 1 + 1 + 7$

$② 5 + 3 + 2$

$③ 7 + 1 + 2$

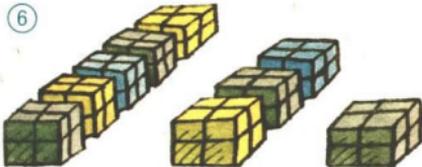
$④ 4 + 3 + 1$

$6 + 2 + 2$

$3 + 3 + 2$

$2 + 4 + 4$

$6 + 1 + 2$



2 Subtrahenden



$$7 - 2 - 3$$

$$7 - 2 = 5$$

$$5 - 3 = 2$$

$$7 - 2 - 3 = 2$$

$$7 - 2 - 3 = 2$$

$$2 + 3 = 5$$

$$7 - 5 = 2$$

$$7 - 2 - 3 = 2$$

$$\textcircled{1} 5 - 2 - 1$$

$$5 - 3$$

$$\textcircled{2} 8 - 4 - 2$$

$$8 - 6$$

$$\textcircled{3} 10 - 5 - 2$$

$$10 - 7$$

$$\textcircled{4} 9 - 3 - 2$$

$$9 - 5$$

$$\textcircled{5} 5 - 1 - 2$$

$$6 - 2 - 2$$

$$5 - 3 - 2$$

$$6 - 2 - 3$$

$$5 - 2 - 2$$

$$\textcircled{6} 6 - 3 - 3$$

$$7 - 3 - 2$$

$$8 - 2 - 3$$

$$9 - 2 - 1$$

$$10 - 3 - 2$$

$$\textcircled{7} 9 - 4 - 4$$

$$7 - 4 - 1$$

$$10 - 5 - 3$$

$$8 - 4 - 3$$

$$10 - 2 - 6$$

$$\textcircled{8} 10 - 4 - 5$$

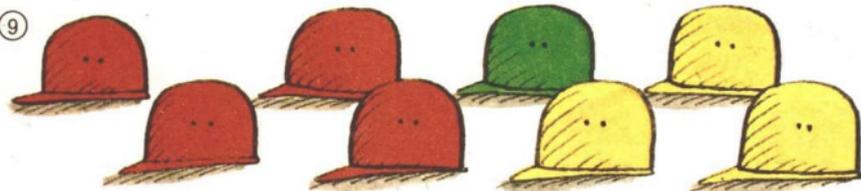
$$8 - 5 - 1$$

$$7 - 5 - 2$$

$$9 - 2 - 5$$

$$8 - 4 - 4$$

\textcircled{9}



$$\textcircled{1} 5 + 1 + 4$$

$$5 + 2 + 1$$

$$4 + 2 + 3$$

$$7 + 1 + 1$$

$$4 + 4 + 2$$

$$\textcircled{2} 10 - 2 - 5$$

$$7 - 1 - 4$$

$$9 - 6 - 2$$

$$6 - 1 - 2$$

$$8 - 2 - 4$$

$$\textcircled{3} 3 + 1 + 1$$

$$3 + 2 + 2$$

$$3 + 3 + 3$$

$$6 + 1 + 1$$

$$6 + 2 + 2$$

$$\textcircled{4} 10 - 1 - 1$$

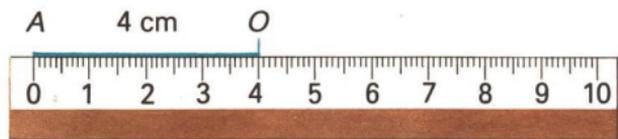
$$10 - 2 - 2$$

$$10 - 3 - 3$$

$$10 - 4 - 4$$

$$10 - 5 - 5$$

Das Zentimeter



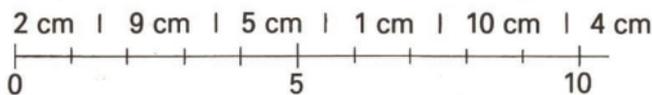
① Gib die Länge der Strecken in Zentimeter an!



Miß die Länge

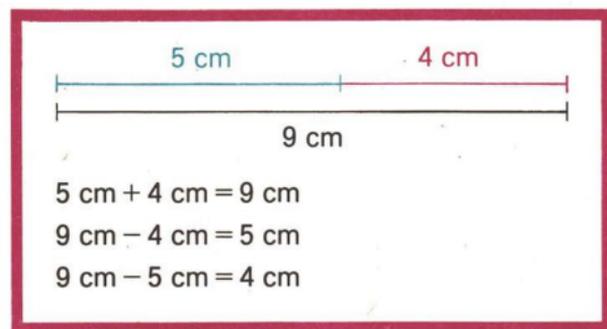
- ② deiner Rechenstäbchen!
 ③ der auf dieser Seite abgebildeten Gegenstände!

④ Zeige auf dem Zahlenstrahl Strecken folgender Länge!



⑤ Zeichne Strecken folgender Länge!

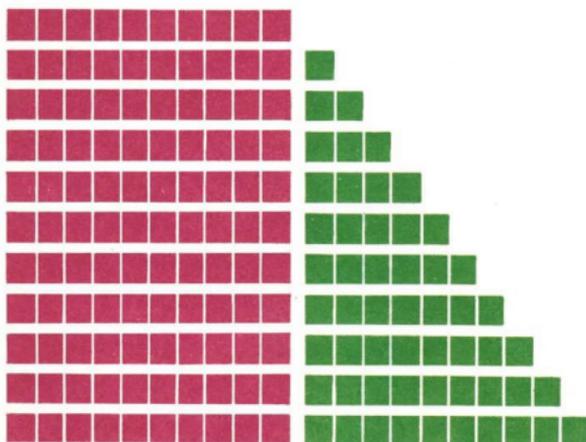
3 cm | 6 cm | 1 cm | 8 cm | 4 cm | 7 cm



- ⑥ $4 \text{ cm} + 3 \text{ cm}$ ⑦ $7 \text{ cm} - 6 \text{ cm}$ ⑧ $7 \text{ cm} - 2 \text{ cm} - 4 \text{ cm}$
 $1 \text{ cm} + 8 \text{ cm}$ $10 \text{ cm} - 4 \text{ cm}$ $8 \text{ cm} - 3 \text{ cm} - 2 \text{ cm}$

Die Zahlen von 0 bis 20

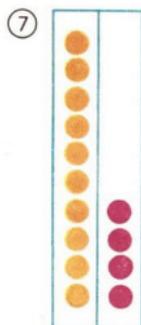
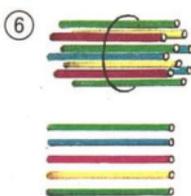
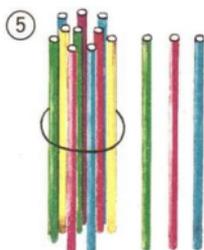
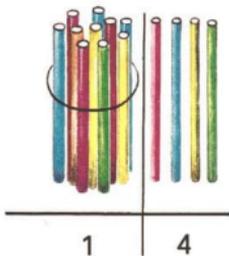
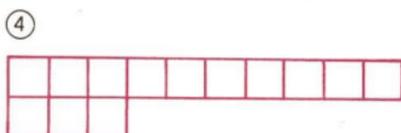
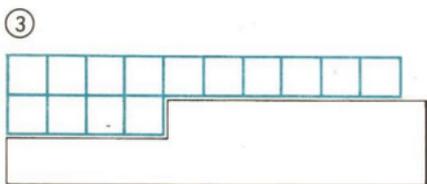
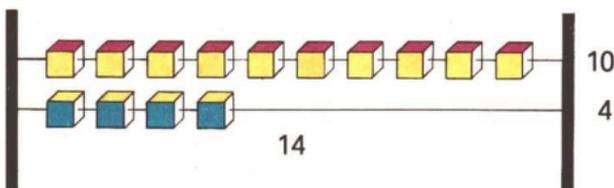
Die Zahlen von 11 bis 20

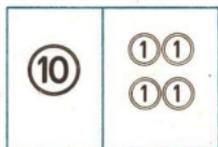


$10 + 0 = 10$
$10 + 1 = 11$
$10 + 2 = 12$
$10 + 3 = 13$

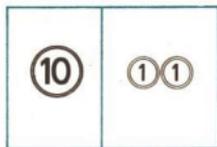
- ① $10 + 4$
 $10 + 5$
 $10 + 6$
 $10 + 7$
 $10 + 8$
 $10 + 9$

$10 + 10 = 20$





$10 + 4 = 14$

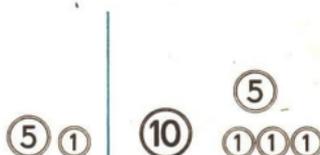
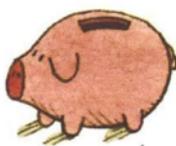
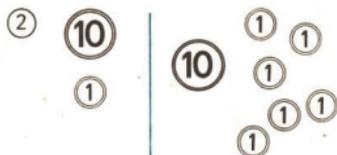
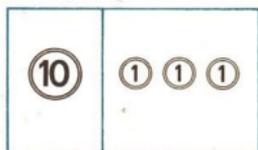
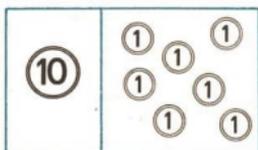
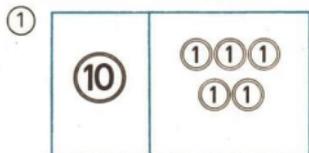


$10 + 2 = 12$



$10 + 10 = 20$

	1	4
	1	2
	2	0



Lege mit Rechengeld!

③

10	1
1	1
1	3
1	6

④ 12	⑤ 14	⑥ 10 + 7	⑦ 10 + 8
15	9	10 + 1	10 + 2
20	18	10 + 4	10 + 6
17	6	10 + 0	10 + 3

Lies und schreibe!

⑧

11	16	7	14	9	3	10	8	17
0	2	18	6	12	20	4	15	19



⑨ 10 + 10	⑩ 10 + 7	⑪ 10 + 1
10 + 5	10 + 3	10 + 4
10 + 2	10 + 9	10 + 8

$10 + a$



Wenn $a = 5$, so $10 + a = 15$,
denn $10 + 5 = 15$

① $10 + a$ ② $10 + a$

$a = 3$

$a = 7$

$a = 2$

$a = 9$

$a = 1$

$a = 10$

$a = 6$

$a = 8$

③ a | $10 + a$

6

4

2

8

④ $10 + a$ | a

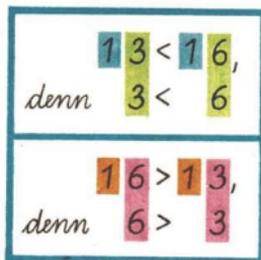
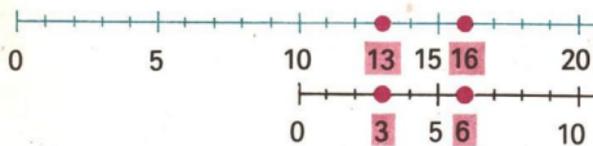
14

17

12

20

Die Ordnung der Zahlen 0 bis 20



Vergleiche! ① 6 2 ② 3 9 ③ 5 8 ④ 4 1 ⑤ 7 5
16 12 13 19 15 18 14 11 17 15

⑥ 12 15 | 19 14 ⑦ 16 15 | 13 16 ⑧ 15 20 | 13 18
11 17 | 18 12 14 17 | 19 15 16 11 | 20 17

Ordne! ⑨ 20, 15, 18, 19, 13 ⑩ 12, 19, 16, 17, 11
⑪ 5, 13, 16, 9, 20 ⑫ 10, 8, 14, 11, 9 ⑬ 20, 14, 2, 4, 12

Zähle! ⑭ von 12 bis 18 ⑮ von 6 bis 13
von 20 bis 14 von 14 bis 8

Addieren und Subtrahieren von 10 bis 20

$13 + 2$



$3 + 2 = 5$

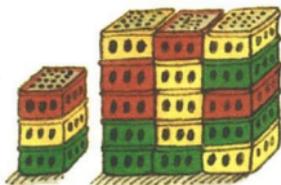


$13 + 2 = 15$

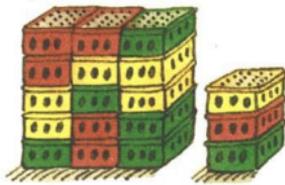
13	+	2	=	15
3	+	2	=	5

①	15 + 3		12 + 4		11 + 6
	5 + 3		2 + 4		1 + 6

- | | | | | | | | | | | | |
|---|--------|---|--------|---|--------|---|--------|---|--------|---|--------|
| ② | 12 + 5 | ③ | 17 + 2 | ④ | 11 + 3 | ⑤ | 13 + 1 | ⑥ | 15 + 2 | ⑦ | 13 + 5 |
| | 14 + 2 | | 14 + 3 | | 13 + 6 | | 14 + 4 | | 12 + 6 | | 16 + 2 |
| | 16 + 1 | | 11 + 4 | | 15 + 1 | | 16 + 3 | | 11 + 9 | | 15 + 5 |
| | 15 + 4 | | 18 + 1 | | 12 + 2 | | 11 + 5 | | 17 + 1 | | 13 + 2 |



3	+	15	=	18
15	+	3	=	18



- | | | | | | | | | | |
|---|--------|--|--------|--|--------|---|--------|---|--------|
| ⑧ | 4 + 12 | | 2 + 13 | | 5 + 14 | ⑨ | 3 + 12 | ⑩ | 4 + 13 |
| | 12 + 4 | | 13 + 2 | | 14 + 5 | | 5 + 11 | | 3 + 15 |
| | | | | | | | 1 + 18 | | 2 + 12 |
| | | | | | | | 4 + 15 | | 5 + 15 |



$$5 - 2 = 3$$

1	5	-	2	=	13
	5	-	2	=	3

① $17 - 3$

$7 - 3$



$$15 - 2 = 13$$

② $14 - 3$

$9 - 5$

③ $20 - 6$

$4 - 3$

④ $10 - 6$

⑤ $19 - 4$

$13 - 2$

$17 - 5$

$15 - 1$

$16 - 5$

⑥ $15 - 3$

$18 - 6$

$13 - 1$

$19 - 6$

$16 - 2$

⑦ $17 - 4$

$14 - 2$

$18 - 5$

$15 - 4$

$19 - 3$

⑧ $18 - 3$

$19 - 7$

$17 - 2$

$16 - 3$

$20 - 4$

⑨ $12 - 1$

$15 - 2$

$18 - 4$

$20 - 5$

$19 - 2$

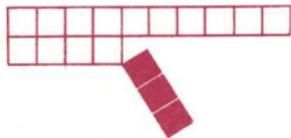
⑩ $17 - 6$

$18 - 7$

$20 - 3$

$14 - 1$

$20 - 8$



1	7	-	3	=	14
1	4	+	3	=	17



⑪ $16 - 4$

$12 + 4$

⑫ $13 - 2$

$11 + 2$

⑬ $19 - 2$

$15 - 4$

$18 - 3$

$16 - 5$

$14 - 2$

$17 - 4$

⑭ $16 - 3$

$10 - 5$

$15 - 2$

$18 - 6$

$20 - 5$

$17 - 6$

⑮ $12 + 4$

$17 + 2$

$13 + 5$

$15 + 3$

$14 + 6$

$11 + 5$

⑯ $15 - 3$

$14 + 2$

$19 - 4$

$16 + 3$

$18 - 4$

$12 + 5$

①

a	$a + 3$
11	
14	
16	
12	
15	

②

e	$e - 5$
18	
16	
19	
17	
20	

③

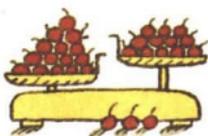
i	$10 - i$
4	
7	
2	
6	
9	

④

i	$20 - i$
4	
7	
2	
6	
9	

12	+	x	=	15
		x	=	3

denn $12 + 3 = 15$



- ⑤ $13 + x = 16$ ⑥ $18 - x = 13$
 $14 + x = 18$ $16 - x = 12$
 $17 + x = 20$ $19 - x = 11$
 $12 + x = 19$ $15 - x = 13$

13	+	x	<	15
		x	=	0,1

denn $13 + 0 < 15$

$13 + 1 < 15$

- ⑦ $12 + x < 16$
 $15 + x < 17$
 $14 + x < 15$
 $16 + x < 18$

17	-	x	>	14
		x	=	0,12

denn $17 - 0 > 14$

$17 - 1 > 14$

$17 - 2 > 14$

- ⑧ $16 - x > 13$
 $14 - x > 12$
 $18 - x > 15$
 $15 - x > 14$

12	+	4	=	16
16	-	4	=	12
12	=	16	-	4
16	=	12	+	4

- ⑨ $15 \quad 2 \quad 13$
 $12 \quad 4 \quad 16$
 ⑩ $14 \quad 17 \quad 3$
 $18 \quad 12 \quad 6$

14	<	17		
14	+	3	=	17
19	>	14		
19	=	14	+	5

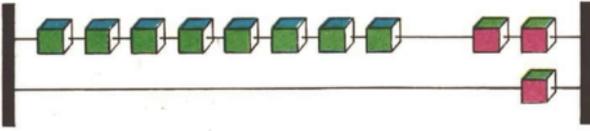
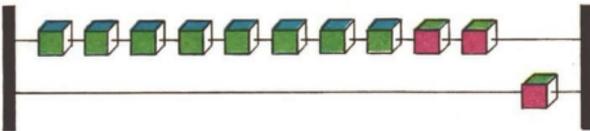
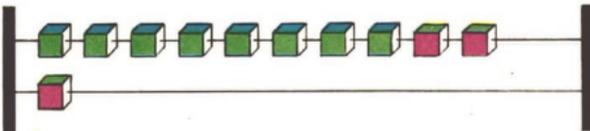
- ⑪ $11 \quad 14$ ⑫ $13 \quad 19$
 $13 \quad 16$ $17 \quad 14$
 $15 \quad 12$ $12 \quad 18$
 $20 \quad 16$ $19 \quad 15$

$16 - 4 = 12$



Addieren und Subtrahieren von 0 bis 20

- ① $8 + x = 10$ ② $7 + x = 10$ ③ $5 = 4 + 1$ ④ $4 = 2 + x$
 $6 + x = 10$ $2 + x = 10$ \vdots $6 = 2 + x$
 $9 + x = 10$ $8 + x = 10$ $3 = 2 + 1$ $3 = 2 + x$
 $5 + x = 10$ $3 + x = 10$ \vdots $5 = 2 + x$

	$8 + 3$
	$8 + 2 = 10$
	$10 + 1 = 11$
	$8 + 3 = 11$

$8 + 3 = 11$; $3 + 8 = 11$



- ⑤ $9 + 2$ ⑥ $8 + 3$ ⑦ $9 + 1$ ⑧ $7 + 3$ ⑨ $9 + 2$
 $2 + 9$ $3 + 8$ $7 + 4$ $4 + 4$ $3 + 5$
 $7 + 4$ $6 + 5$ $6 + 2$ $2 + 7$ $8 + 3$
 $4 + 7$ $5 + 6$ $3 + 6$ $5 + 6$ $6 + 4$



- ⑩ $8 + 2$ ⑪ $2 + 9$ ⑫ $7 + 4$ ⑬ $5 + 5$
 $4 + 7$ $8 + 0$ $3 + 8$ $9 + 2$
 $3 + 3$ $8 + 3$ $0 + 9$ $3 + 6$
 $5 + 6$ $2 + 5$ $1 + 7$ $6 + 5$

- ① $11 - x = 10$ ② $12 - 2$ ③ $10 - 1$ ④ $11 - 1 - 2$ ⑤ $12 - 2 - 1$
 $13 - x = 10$ $11 - 1$ $10 - 3$ $13 - 3 - 1$ $14 - 4 - 3$
 $12 - x = 10$ $15 - 5$ $10 - 2$ $12 - 2 - 3$ $11 - 1 - 4$
 $14 - x = 10$ $13 - 3$ $10 - 5$ $15 - 5 - 2$ $13 - 3 - 2$

	$11 - 3$
	$11 - 1 = 10$
	2 $10 - 2 = 8$ $11 - 3 = 8$

- ⑥ $11 - 4$ ⑦ $11 - 2$ ⑧ $10 - 4$ ⑨ $11 - 6$ ⑩ $7 - 3$
 $11 - 3$ $11 - 5$ $11 - 9$ $9 - 5$ $11 - 7$
 ⑪ $11 - 2$ ⑫ $11 - 5$ ⑬ $11 - 4$ ⑭ $11 - 3$
 $11 - 9$ $11 - 6$ $11 - 7$ $11 - 8$

$$\begin{array}{r} 11 - 3 = 8 \\ 11 - 8 = 3 \end{array}$$

	$9 + 2$ $2 + 9$ $8 + 3$ $3 + 8$ $7 + 4$ $4 + 7$ $6 + 5$ $5 + 6$	$11 - 2$ $11 - 9$ $11 - 3$ $11 - 8$ $11 - 4$ $11 - 7$ $11 - 5$ $11 - 6$
--	--	--

- ⑮ $7 + 4$ $11 - 4$ ⑯ $6 + 5$ $11 - 5$
 $4 + 7$ $11 - 7$ $5 + 6$ $11 - 6$



① $6 + x = 10$ ② $6 = 4 + x$ ③ $6 + 4 + 2$ ④ $12 - 2 - 4$
 $8 + x = 10$ $4 = 2 + x$ $8 + 2 + 2$ $12 - 2 - 2$
 $9 + x = 10$ $3 = 1 + x$ $9 + 1 + 2$ $12 - 2 - 1$
 $7 + x = 10$ $5 = 3 + x$ $7 + 3 + 2$ $12 - 2 - 3$



$$\begin{array}{r} 6 + 6 \\ \hline 6 + 4 = 10 \\ 10 + 2 = 12 \\ \hline 6 + 6 = 12 \end{array}$$



6	+	6	=	12
12	-	6	=	6

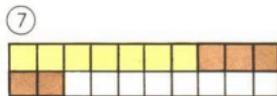
$$\begin{array}{r} 12 - 6 \\ \hline 12 - 2 = 10 \\ 10 - 4 = 6 \\ \hline 12 - 6 = 6 \end{array}$$



$$\begin{array}{r} 8 + 4 \\ 4 + 8 \\ 12 - 4 \\ 12 - 8 \end{array}$$



$$\begin{array}{r} 9 + 3 \\ 3 + 9 \\ 12 - 3 \\ 12 - 9 \end{array}$$



$$\begin{array}{r} 7 + 5 \\ 5 + 7 \\ 12 - 5 \\ 12 - 7 \end{array}$$

12	$9 + 3$	$3 + 9$	$12 - 3$	$12 - 9$
	$8 + 4$	$4 + 8$	$12 - 4$	$12 - 8$
	$7 + 5$	$5 + 7$	$12 - 5$	$12 - 7$
	$6 + 6$		$12 - 6$	

$$\begin{array}{|c|c|c|} \hline 9 & + & 3 & = & 12 \\ \hline 3 & + & 9 & = & 12 \\ \hline \end{array}$$

① $6 + 5$ ② $7 + 4$ ③ $9 + 2$ ④ $9 + 3$ ⑤ $6 + 6$
 $5 + 6$ $4 + 7$ $2 + 9$ $3 + 9$ $3 + 3$
 $8 + 4$ $6 + 3$ $7 + 5$ $8 + 3$ $5 + 5$
 $4 + 8$ $3 + 6$ $5 + 7$ $3 + 8$ $4 + 4$

$$\begin{array}{r} 12 - 7 \\ \hline 7 + 5 = 12 \\ 12 - 7 = 5 \end{array}$$

$$\begin{array}{r} 12 - 7 \\ \hline 5 + 7 = 12 \\ 12 - 7 = 5 \end{array}$$

$$\boxed{12 - 7 = 5}$$

⑥ $12 - 4$ ⑦ $11 - 2$ ⑧ $11 - 4$ ⑨ $12 - 9$ ⑩ $11 - 7$ ⑪ $8 - 3$
 $11 - 3$ $12 - 3$ $12 - 8$ $11 - 8$ $7 - 4$ $11 - 9$
 $10 - 5$ $9 - 7$ $11 - 9$ $12 - 7$ $12 - 6$ $12 - 8$
 $12 - 6$ $11 - 5$ $12 - 5$ $11 - 6$ $9 - 5$ $6 - 6$

$$\begin{array}{|c|c|c|} \hline 12 & - & 4 & = & 8 \\ \hline 8 & + & 4 & = & 12 \\ \hline \end{array}$$

⑫ $10 - 3$ ⑬ $12 - 7$ ⑭ $11 - 7$ ⑮ $9 - 3$
 $11 - 3$ $12 - 8$ $12 - 5$ $12 - 4$
 $12 - 3$ $12 - 9$ $11 - 9$ $8 - 6$

$$\begin{array}{|c|c|c|} \hline 7 & + & 5 & = & 12 \\ \hline 5 & + & 7 & = & 12 \\ \hline 12 & - & 5 & = & 7 \\ \hline 12 & - & 7 & = & 5 \\ \hline \end{array}$$

⑯ $9 + 3$ ⑰ $6 + 5$ ⑱ $8 + 4$ ㉑ $7 + 4$

① $4 + 4$ ② $9 - 6$ ③ $12 - 9$ ④ $11 + 4$
 $8 + 4$ $12 - 4$ $16 - 5$ $16 - 2$
 $12 + 4$ $11 - 8$ $12 - 3$ $12 + 7$
 $4 + 7$ $12 - 7$ $11 - 6$ $11 - 5$



⑤ $9 + 3$ ⑥ $12 - 7$ ⑦ $15 - 5$ ⑧ $7 + 5$ ⑨ $11 - 7$ ⑩ $2 + 7$
 $9 - 3$ $6 + 6$ $4 + 8$ $12 - 6$ $11 + 7$ $9 - 9$
 $12 + 8$ $18 - 3$ $12 + 5$ $14 - 2$ $12 + 6$ $0 + 8$
 $12 - 8$ $8 + 3$ $12 - 5$ $3 + 9$ $12 - 6$ $12 + 0$

① $6 + x = 10$ ② $4 = 1 + x$ ③ $5 + 5 + 3$ ④ $13 - 3 - 1$
 $4 + x = 10$ $6 = 3 + x$ $7 + 3 + 3$ $13 - 3 - 4$
 $7 + x = 10$ $8 = 5 + x$ $4 + 6 + 3$ $13 - 3 - 6$
 $5 + x = 10$ $5 = 2 + x$ $8 + 2 + 3$ $13 - 3 - 2$

$8 + 5$
 $8 + 2 = 10$
 $10 + 3 = 13$



$8 + 5 = 13$; $13 - 5 = 8$

$13 - 5$
 $13 - 3 = 10$
 $10 - 2 = 8$

⑤
 $9 + 4$ $13 - 4$
 $4 + 9$ $13 - 9$

⑥
 $7 + 6$ $13 - 6$
 $6 + 7$ $13 - 7$

⑦ $8 + 5$ | $5 + 8$ | $13 - 5$ | $13 - 8$

13	$9 + 4$ $4 + 9$	$13 - 4$ $13 - 9$
	$8 + 5$ $5 + 8$	$13 - 5$ $13 - 8$
	$7 + 6$ $6 + 7$	$13 - 6$ $13 - 7$

$8 + 5 = 13$
$5 + 8 = 13$
$13 - 5 = 8$
$13 - 8 = 5$

⑧ $9 + 4$ ⑨ $7 + 6$ ⑩ $7 + 4$

⑪ $7 + 6$ ⑫ $5 + 8$ ⑬ $13 - 4$ ⑭ $13 - 9$ ⑮ $6 + 7$ ⑯ $17 - 6$
 $9 + 4$ $13 + 5$ $12 - 5$ $17 - 4$ $4 + 9$ $13 - 7$
 $8 + 3$ $4 + 9$ $13 - 6$ $12 - 5$ $7 + 4$ $12 - 4$
 $8 + 5$ $12 + 6$ $11 - 7$ $13 - 6$ $8 + 5$ $13 - 9$
 $6 + 5$ $6 + 7$ $13 - 5$ $13 - 8$ $5 + 7$ $13 - 6$

Wenn $a=5$, so $8+a=13$

Wenn $e=5$, so $13-e=8$

①

a	$8+a$
5	
2	
4	
1	
3	

②

u	$u+5$
8	
4	
7	
0	
6	

③

e	$13-e$
5	
2	
4	
6	
8	

④

i	$13-i$
9	
1	
7	
0	
3	

⑤

9	5	14	-	5
5	9	14	-	9

⑥

8	6	14	-	6
6	8	14	-	8

⑦

7	7	14	-	7
---	---	----	---	---

74	$9+5$	$5+9$	$14-5$	$14-9$
	$8+6$	$6+8$	$14-6$	$14-8$
	$7+7$		$14-7$	

- ⑧ $7+7$ ⑨ $5+9$ ⑩ $14-5$ ⑪ $14-9$ ⑫ $8+6$ ⑬ $18-5$
 $9+5$ $14+3$ $13-6$ $18-5$ $5+9$ $14-7$
 $7+6$ $6+8$ $14-7$ $14-6$ $7+5$ $13-4$

Wenn $a=5$ und $e=3$,
so $a+e=8$

Wenn $i=8$ und $u=6$,
so $i-u=2$

⑭

a	e	$a+e$
5	3	
8	6	
6	4	
10	5	

⑮

i	u	$i-u$
8	6	
14	5	
10	2	
17	7	



① 9 Kinder rodeln. 4 Kinder davon gehen heim.

Wieviel Kinder rodeln nun noch?

② 6 Kinder sind auf dem Eis. Nun kommen 3 Kinder dazu.

Wieviel Kinder sind nun auf dem Eis?

③ $14 - 7$ ④ $9 + 5$ ⑤ $17 - 6$ ⑥ $5 + 4$ ⑦ $12 - 5$ ⑧ $9 + 4$

$13 - 5$ $12 + 3$ $14 - 6$ $7 + 6$ $14 - 8$ $8 - 5$

$12 - 6$ $6 + 8$ $18 - 5$ $9 - 4$ $13 + 2$ $8 + 6$

$11 - 3$ $17 + 3$ $13 - 5$ $8 + 6$ $14 - 5$ $9 - 7$

$10 - 4$ $7 + 7$ $14 - 9$ $8 - 3$ $14 + 5$ $7 + 7$

+	0	1	2	3	4	5	6	7	8	9	10
0	0	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10	11
2	2	3	4	5	6	7	8	9	10	11	12
3	3	4	5	6	7	8	9	10	11	12	13
4	4	5	6	7	8	9	10	11	12	13	14
5	5	6	7	8	9	10	11	12	13	14	15
6	6	7	8	9	10	11	12	13	14		16
7	7	8	9	10	11	12	13	14			17
8	8	9	10	11	12	13	14				18
9	9	10	11	12	13	14					19
10	10	11	12	13	14	15	16	17	18	19	20

$$2 + 4 = 6$$

$$4 + 2 = 6$$

$$5 + 8 = 13$$

$$8 + 5 = 13$$

⑨

$$4 + 4 \quad | \quad 3 + 0$$

$$7 + 6 \quad | \quad 9 + 3$$

⑩

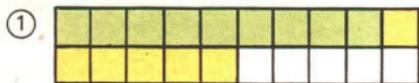
$$5 + 1 \quad | \quad 7 + 2$$

$$8 + 8 \quad | \quad 7 + 5$$

⑪

$$9 + 0 \quad | \quad 7 + 7$$

$$10 + 6 \quad | \quad 8 + 5$$



$$\begin{array}{l|l} 9+6 & 15-6 \\ 6+9 & 15-9 \end{array}$$



$$\begin{array}{l|l} 8+7 & 15-7 \\ 7+8 & 15-8 \end{array}$$

15	$\begin{array}{l l} 9+6 & 6+9 \\ 8+7 & 7+8 \end{array}$	$\begin{array}{l l} 15-6 & 15-9 \\ 15-7 & 15-8 \end{array}$
----	---	---

- | | | | | | |
|---------|---------|----------|----------|---------|----------|
| ③ 6 + 6 | ④ 6 + 9 | ⑤ 13 - 9 | ⑥ 15 - 7 | ⑦ 6 + 9 | ⑧ 12 - 3 |
| 7 + 8 | 7 + 7 | 15 - 8 | 12 - 6 | 14 - 7 | 6 + 7 |
| 4 + 7 | 8 + 7 | 11 - 7 | 15 - 9 | 9 + 5 | 14 - 9 |
| 9 + 6 | 9 + 4 | 15 - 6 | 14 - 8 | 15 - 8 | 7 + 8 |
| 6 + 8 | 5 + 7 | 12 - 7 | 11 - 9 | 9 + 2 | 13 - 5 |

⑨

Summe
12
7 + 5 = 12

⑩

Summe
15

⑪

Summe
11

⑫

Summe
14

⑬

a	e	a + e
12	4	
7	8	
8	0	
9	6	
0	9	

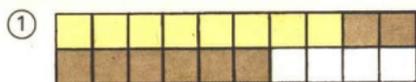
⑭

e	i	e - i
12	6	
15	9	
15	7	
13	5	
11	4	

⑮

a	i	a - i
15	3	
14	2	
15	6	
15	8	
12	0	





$8 + 8 \quad | \quad 16 - 8$



$9 + 7 \quad | \quad 16 - 7$

$7 + 9 \quad | \quad 16 - 9$

16	$9 + 7$	$7 + 9$	$16 - 7$	$16 - 9$
	$8 + 8$		$16 - 8$	

- ③ $5 + 5$ ④ $6 + 9$ ⑤ $10 - 5$ ⑥ $16 - 9$ ⑦ $6 + 8$ ⑧ $9 - 9$
 $6 + 6$ $3 + 9$ $12 - 6$ $15 - 9$ $16 - 8$ $9 + 7$
 $7 + 7$ $5 + 9$ $14 - 7$ $14 - 9$ $7 + 9$ $16 + 3$
 $8 + 8$ $7 + 9$ $16 - 8$ $13 - 9$ $17 - 3$ $16 - 7$

⑨

11	
9	2
5	
7	
10	
6	

⑩

13	
9	
12	
8	
7	
10	

⑪

16	
10	
4	
2	
11	
0	

⑫

14	
7	
4	
5	
12	
8	

⑬

15	
8	
10	
9	
14	
1	

- ⑭ $6 + x = 13$
 $8 + x = 16$
 $3 + x = 11$
 $7 + x = 16$
 $12 + x = 19$



- ⑮ $12 - x = 5$ ⑯ $9 - x = 4$ ⑰ $15 - x = 9$
 $16 - x = 8$ $11 + x = 13$
 $14 - x = 9$ $15 - x = 8$
 $16 - x = 7$ $8 + x = 15$

$9 < 16$	$9 + 7 = 16$
$14 > 8$	$8 + 6 = 14$

- ① 8 16 ② 13 4 ③ 18 13
4 12 16 7 15 17
9 14 15 9 6 11
6 12 14 8 11 18



$$\begin{array}{l|l} 9+8 & 17-8 \\ 8+9 & 17-9 \end{array}$$



$$\begin{array}{l|l} 9+9 & 18-9 \end{array}$$

17	$9+8$ $8+9$	$17-8$ $17-9$
18	$9+9$	$18-9$

③ $6+6$ ④ $3+9$ ⑤ $14-8$ ⑥ $16-9$ ⑦ $12+5$ ⑧ $18-9$

$6+9$ $9+9$ $12-8$ $17-9$ $8+9$ $8+8$

$6+5$ $5+9$ $17-8$ $13-9$ $15-3$ $8-8$

$6+8$ $2+9$ $11-8$ $15-9$ $17-8$ $9+8$

$6+7$ $4+9$ $13-8$ $14-9$ $7+6$ $17-8$

⑨ $8+3$ ⑩ $4+7$ ⑪ $18-9$ ⑫ $15-6$ ⑬ $8+8$ ⑭ $13-8$

$8+4$ $5+7$ $16-8$ $15-7$ $17-8$ $8+9$

$8+5$ $6+7$ $14-7$ $15-8$ $9+9$ $17-9$

$8+6$ $7+7$ $12-6$ $15-9$ $16-7$ $7+8$

$8+7$ $9+7$ $15-7$ $15-3$ $7+8$ $16-9$

⑮ $17-9$ ⑯ $18-9$ ⑰ $9-3$ ⑱ $11-4$ ⑲ $15+4$ ⑳ $9-8$

$9+8$ $9+9$ $3+9$ $11+7$ $15-4$ $9+8$

$17-8$ $16-9$ $12+3$ $4+7$ $11+9$ $9-9$

$8+9$ $7+9$ $12-9$ $7-4$ $11-9$ $9+9$

① $8+a < 12$

$9+a < 11$

$9+a < 13$

$7+a < 11$

$8+a < 11$

② $13-a > 9$

$11-a > 7$

$12-a > 8$

$11-a > 9$

$12-a > 9$



③ $16+i < 18$

$8+a < 12$

$17-e > 14$

$12-u > 9$

$9-a > 6$

Übung und Wiederholung

- ① $6 + x = 10$ ② $13 - a = 10$ ③ $9 - a > 5$ ④ $14 - u > 10$
 $8 + x = 12$ $14 - a = 8$ $3 + a < 7$ $12 + u < 15$
 $5 + x = 13$ $17 - a = 13$ $8 - a > 6$ $13 - u > 9$
 $9 - x = 7$ $12 - a = 7$ $7 + a < 9$ $8 + u < 12$
 $8 - x = 3$ $18 - a = 9$ $9 - a > 5$ $11 - u > 8$

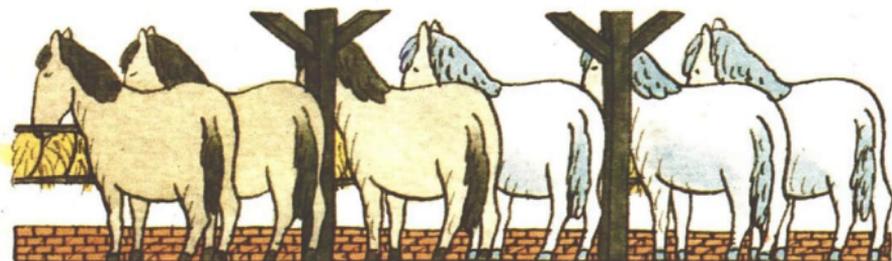


- ⑤ 7 Jungen und 8 Mädchen spielen.
 Wieviel Kinder spielen?
 ⑥ 14 Kinder spielen; 7 von ihnen im Sand.
 Wieviel Kinder spielen auf dem Rasen?

⑦		⑧		⑨		⑩		
e	$e + 8$	i	$i - 6$	u	$7 + u$	a	e	$a - e$
1		10		8		9	7	
7		8		2		12	6	
9		12		12		17	9	
4		15		9		15	8	
6		11		11		17	8	

- ⑪ Horst hat 8 Fahnen. Er gibt 3 Fahnen ab.
 Wieviel Fahnen behält Horst?
 ⑫ 20 Pioniere sollen kommen. 2 Pioniere fehlen noch.
 Wieviel Pioniere sind schon da?

Multiplizieren



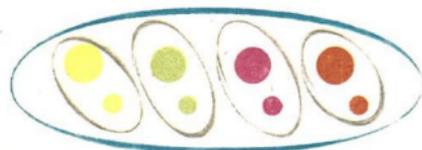
$2 + 2 + 2 = 6$

2; 3; 6;

$3 + 3 = 6$

$2 \cdot 3 = 6$

$3 \cdot 2 = 6$



$2 + 2 + 2 + 2 = 8$

2; 4; 8;



$4 + 4 = 8$

$2 \cdot 4 = 8$

$4 \cdot 2 = 8$

- Das ist das Zeichen für „mal“.

Faktor

Faktor

3

2

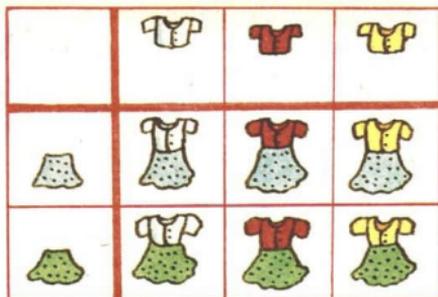
=

6

Produkt

Produkt

Durch Multiplizieren berechnet man ein Produkt.



$$3 + 3 + 3 + 3 = 12$$

$$4 + 4 + 4 = 12$$

$$3 \cdot 4 = 12$$

$$4 \cdot 3 = 12$$

$$3 \cdot 2 = 6$$

$$2 \cdot 3 = 6$$



$$2 + 2 + 2 = 6$$

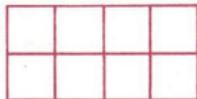
$$3 + 3 = 6$$

$$2 \cdot 3 = 6$$

$$3 \cdot 2 = 6$$

Faktoren kann man vertauschen; das Produkt ist gleich.

$$4 \cdot 2$$



$$2 \cdot 4 = 8$$

$$4 \cdot 2 = 8$$

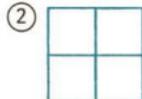
$$5 \cdot 2$$



$$5 \cdot 2$$

$$2 \cdot 5$$

$$2 \cdot 2$$



$$1 \cdot 2$$



$$1 \cdot 2 = 2$$

$$2 \cdot 1 = 2$$

$$2 \cdot 2 = 4$$

$$3 \cdot 2 = 6$$

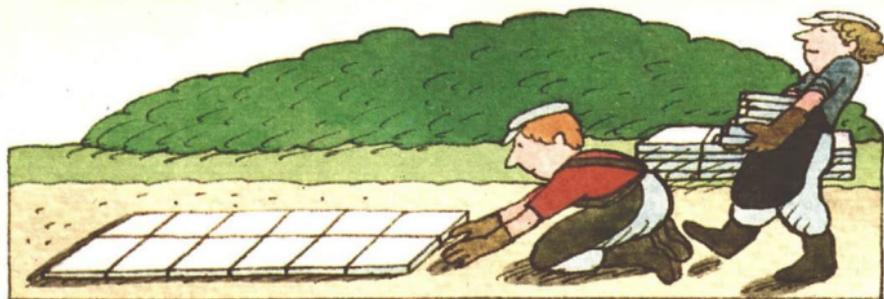
$$2 \cdot 3 = 6$$

$$4 \cdot 2 = 8$$

$$2 \cdot 4 = 8$$

$$5 \cdot 2 = 10$$

$$2 \cdot 5 = 10$$



$6 + 6 + 6 = 18$

$3 + 3 + 3 + 3 + 3 + 3 = 18$



$6 \cdot 3 = 18$



$3 \cdot 6 = 18$

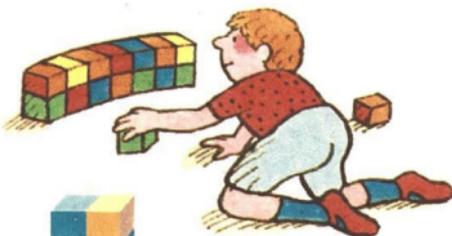
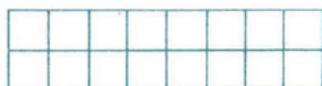


$7 + 7 = 14$

$7 \cdot 2 = 14$

$2 \cdot 7 = 14$

①



②



③



$2 \cdot 5$

$5 + 5 = 10$

$2 \cdot 5 = 10$

$5 \cdot 2 = 10$

④

$6 + 6$

⑤

$7 + 7$

$2 \cdot 3$

$2 + 2 + 2 = 6$

$2 \cdot 3 = 6$

$3 \cdot 2 = 6$

⑥

$9 + 9$

⑦

$10 + 10$

$6 \cdot 2 = 12$

$7 \cdot 2 = 14$

$8 \cdot 2 = 16$

$9 \cdot 2 = 18$

$10 \cdot 2 = 20$

$2 \cdot 6 = 12$

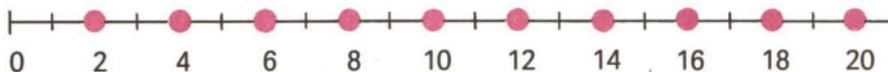
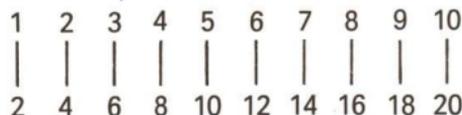
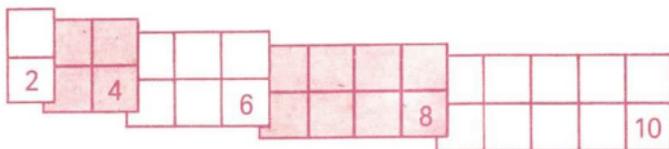
$2 \cdot 7 = 14$

$2 \cdot 8 = 16$

$2 \cdot 9 = 18$

$2 \cdot 10 = 20$

① $2 + 2$ ② $8 + 8$ ③ $1 + 1$ ④ $10 + 10$ ⑤ $5 + 5$
 $7 + 7$ $3 + 3$ $6 + 6$ $4 + 4$ $9 + 9$



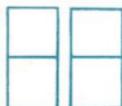
$1 \cdot 2 = 2$	$2 \cdot 1 = 2$
$2 \cdot 2 = 4$	$2 \cdot 2 = 4$
$3 \cdot 2 = 6$	$2 \cdot 3 = 6$
$4 \cdot 2 = 8$	$2 \cdot 4 = 8$
$5 \cdot 2 = 10$	$2 \cdot 5 = 10$
$6 \cdot 2 = 12$	$2 \cdot 6 = 12$
$7 \cdot 2 = 14$	$2 \cdot 7 = 14$
$8 \cdot 2 = 16$	$2 \cdot 8 = 16$
$9 \cdot 2 = 18$	$2 \cdot 9 = 18$
$10 \cdot 2 = 20$	$2 \cdot 10 = 20$

⑥	a	$a + a$	⑦	a	$a \cdot 2$
	1			1	
	3			3	
	8			8	
	10			10	
	5			5	

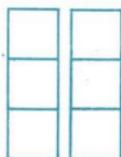
⑧	e	$e + e$	⑨	e	$e \cdot 2$
	4			4	
	7			7	
	9			9	
	6			6	
	2			2	



Dividieren



$$4 : 2 = 2$$

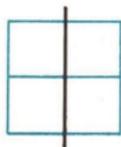


$$6 : 2 = 3$$

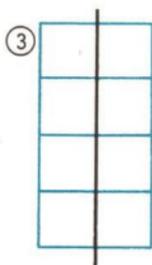
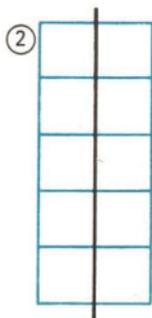
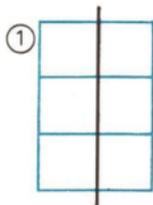


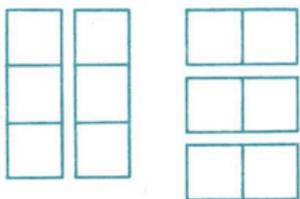
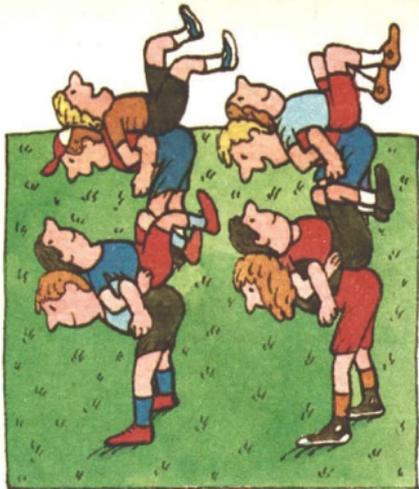
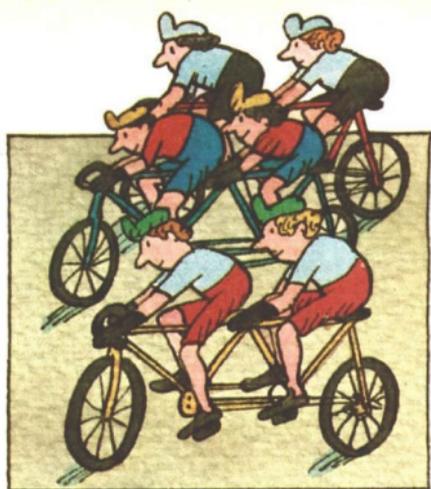
• Das ist das Zeichen für „geteilt durch“.

Gleichungen wie $6 : 2 = 3$
schreibt man beim Dividieren.

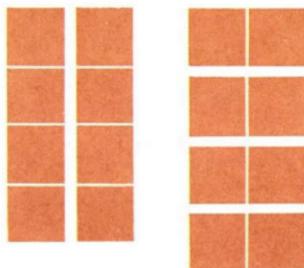


$$4 : 2 = 2$$

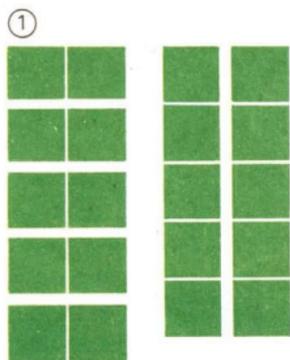




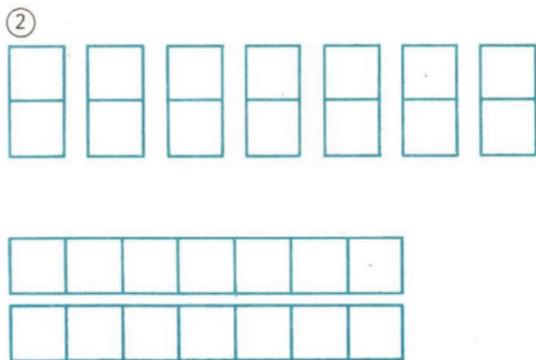
$$6 : 2 = 3$$



$$8 : 2 = 4$$

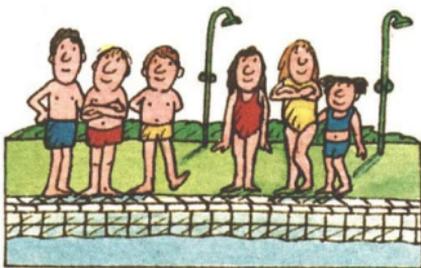
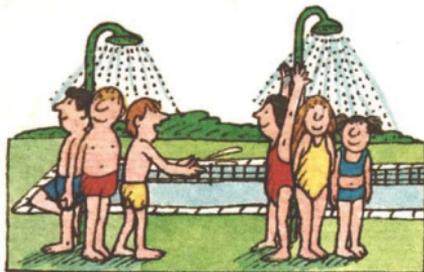


$$10 : 2$$



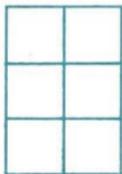
$$14 : 2$$

Multiplizieren und Dividieren



$6 : 2 = 3$, denn $2 \cdot 3 = 6$
 $3 \cdot 2 = 6$

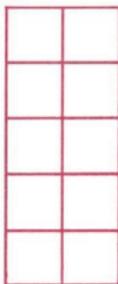
①



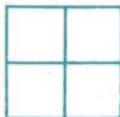
$6 : 2 = 3$

$3 \cdot 2 = 6$

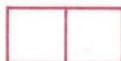
②



③



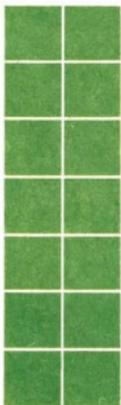
④



⑤



⑥



⑦

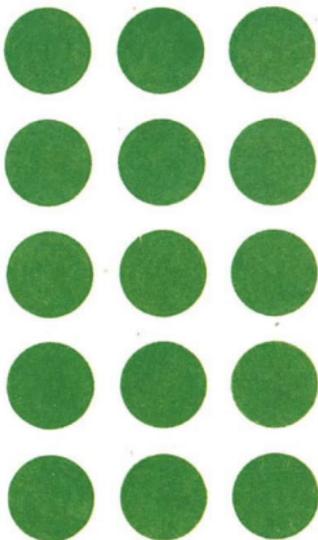


Merke!

$1 \cdot 2 = 2$	$2 : 2 = 1$
$2 \cdot 2 = 4$	$4 : 2 = 2$
$3 \cdot 2 = 6$	$6 : 2 = 3$
$4 \cdot 2 = 8$	$8 : 2 = 4$
$5 \cdot 2 = 10$	$10 : 2 = 5$
$6 \cdot 2 = 12$	$12 : 2 = 6$
$7 \cdot 2 = 14$	$14 : 2 = 7$
$8 \cdot 2 = 16$	$16 : 2 = 8$
$9 \cdot 2 = 18$	$18 : 2 = 9$
$10 \cdot 2 = 20$	$20 : 2 = 10$

$$\textcircled{1} \begin{array}{l} 3 \cdot 2 \\ 5 \cdot 2 \\ 7 \cdot 2 \end{array} \quad \begin{array}{l} 6 \cdot 2 \\ 4 \cdot 2 \\ 8 \cdot 2 \end{array} \quad \begin{array}{l} 10 \cdot 2 \\ 2 \cdot 2 \\ 9 \cdot 2 \end{array}$$

$$\textcircled{2} \begin{array}{l} 12 : 2 \\ 8 : 2 \\ 20 : 2 \end{array} \quad \begin{array}{l} 14 : 2 \\ 18 : 2 \\ 6 : 2 \end{array} \quad \begin{array}{l} 4 : 2 \\ 10 : 2 \\ 16 : 2 \end{array}$$



1	2	3		6	7	8	9	10
2								
3								
4								
5		15						
8								
9								
10								

$$3 \cdot 5 = 15$$

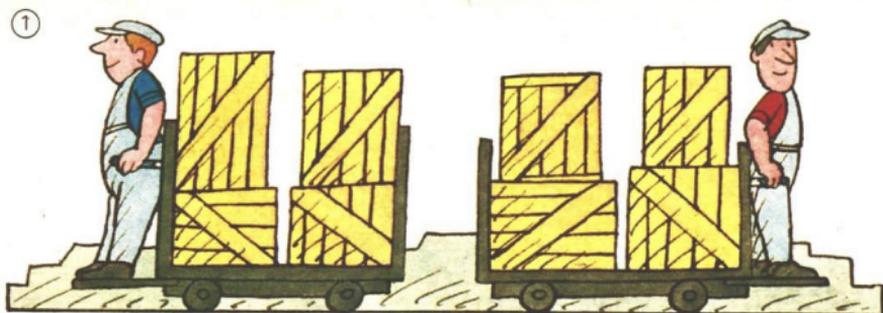
$$5 \cdot 3 = 15$$

Löse durch Abdecken!

$$\textcircled{3} \begin{array}{l} 3 \cdot 4 \\ 4 \cdot 3 \end{array} \quad \textcircled{4} \begin{array}{l} 3 \cdot 5 \\ 5 \cdot 3 \end{array} \quad \textcircled{5} \begin{array}{l} 3 \cdot 6 \\ 6 \cdot 3 \end{array} \quad \textcircled{6} \begin{array}{l} 4 \cdot 5 \\ 5 \cdot 4 \end{array} \quad \textcircled{7} \begin{array}{l} 3 \cdot 3 \\ 4 \cdot 4 \end{array}$$

6	+	6	+	6	=	18
		3	·	6	=	18
		6	·	3	=	18

$$\textcircled{8} \begin{array}{l} 4 + 4 + 4 \\ 5 + 5 + 5 \\ 3 + 3 + 3 \\ 2 + 2 + 2 \end{array} \quad \textcircled{9} \begin{array}{l} 6 + 6 \\ 8 + 8 \\ 4 + 4 \\ 9 + 9 \end{array} \quad \textcircled{10} \begin{array}{l} 4 + 4 + 4 + 4 \\ 3 + 3 + 3 + 3 \\ 5 + 5 + 5 + 5 \\ 2 + 2 + 2 + 2 \end{array}$$



② Ein Auto fährt zweimal zum Bahnhof und holt jedesmal 5 Kisten.
Wieviel Kisten holt das Auto?

a	$a \cdot 2$
3	
6	
2	
5	

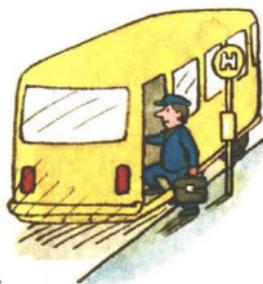
e	$2 \cdot e$
4	
1	
10	
7	

a	$a \cdot 2$	$2 \cdot a$
3		
5		
9		
7		

⑥ 2 Lastwagen kommen ins Werk.
Auf jedem Wagen stehen 2 Maschinen.
Wieviel Maschinen erhält das Werk?

⑦ Ein Faktor ist 2, der andere Faktor ist 7.
Multipliziere!

⑧ In einem Omnibus fahren 18 Arbeiter.
Im nächsten Omnibus fahren 2 Arbeiter mehr.
Wieviel Arbeiter fahren in diesem Omnibus?



a	$2 \cdot a$
9	
7	
1	
10	

e	$e \cdot 2$
5	
2	
8	
3	

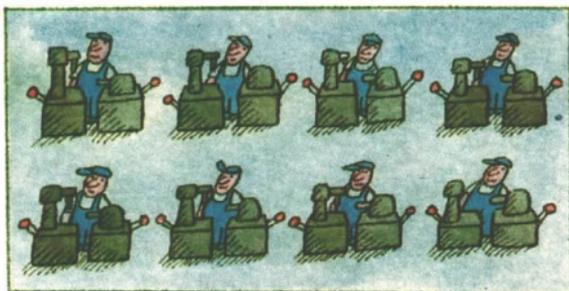
i	$i : 2$
12	
8	
20	
4	

u	$u : 2$
2	
10	
14	
18	

- ① $0 + 2$ ② $10 + 2$ ③ $4 + 9$ ④ $10 + 10$ ⑤ $18 - 6$ ⑥ $16 - 9$
 $2 + 2$ $12 + 2$ $8 + 8$ $7 + 7$ $15 - 7$ $17 - 8$
 $4 + 2$ $14 + 2$ $7 + 6$ $1 + 0$ $13 - 8$ $18 - 9$
 $8 + 2$ $18 + 2$ $5 + 8$ $9 + 9$ $12 - 6$ $15 - 8$

⑦

a	e	a · e
2	4	
6	2	
2	3	
7	2	
2	7	



- ⑧ In der Werkhalle arbeiten 8 Arbeiter. Jeder bedient 2 Maschinen. An wieviel Maschinen wird gearbeitet?
- ⑨ In einem Saal stehen 10 Maschinen. In einem anderen Saal stehen doppelt soviel Maschinen. Wieviel Maschinen stehen im zweiten Saal?
- ⑩ 16 Kisten werden verladen. Auf einen Wagen kommen 9 Kisten. Wieviel Kisten kommen auf den anderen Wagen?
- ⑪ Addiere 18 und 2!
- ⑫ Ein Summand ist 7, der andere Summand ist 8. Errechne die Summe!

Bilde Gleichungen!

$$6 - 2 = 4$$

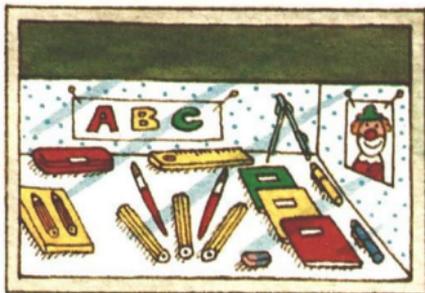
$$6 \cdot 2 = 12$$

$$6 : 2 = 3$$

$$6 + 2 = 8$$

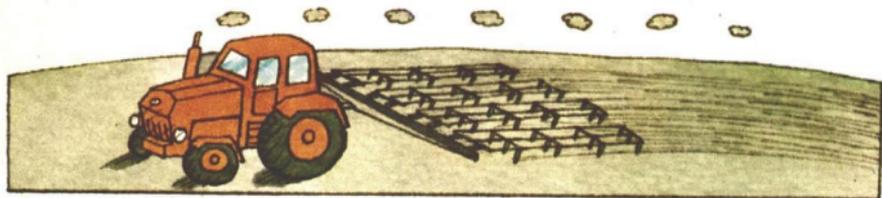
- ⑬ $10 - 2 = 5$ ⑭ $8 - 2 = 6$ ⑮ $4 - 2 = 2$
 $10 : 2 = 5$ $8 : 2 = 4$ $4 : 2 = 2$
 $10 + 2 = 12$ $8 + 2 = 10$ $4 + 2 = 6$
 $10 - 2 = 12$ $8 - 2 = 10$ $4 - 2 = 2$

- ① Ein Heft kostet 10 Pf.
Wieviel Pfennig kosten
2 Hefte?
- ② Horst kauft 6 Hefte.
Uta kauft 5 Hefte mehr als
Horst.
Wieviel Hefte kauft Uta?



- ③ In einem Kasten sind 12 Buntstifte. Frank nimmt 3 davon
heraus. Wieviel Stifte bleiben in diesem Kasten?
- ④ Bernd hat 5 Murmeln. Paul hat ebenso viele Murmeln.
Wieviel Murmeln hat Paul?

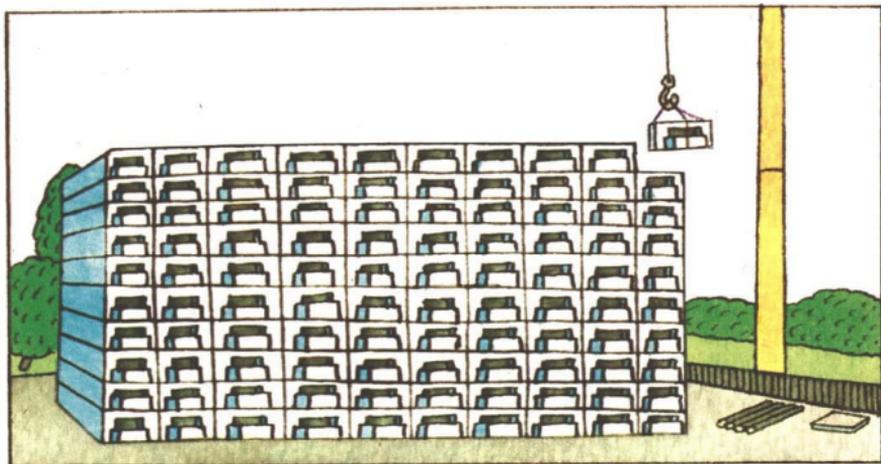
- | | | | |
|-------------------|-----------------|-------------|-------------|
| ⑤ $2 \cdot x = 4$ | ⑥ $x - 2 = 10$ | ⑦ $8 : 2$ | ⑧ $18 + 2$ |
| $2 + x = 8$ | $x + 2 = 20$ | $4 \cdot 2$ | $20 : 2$ |
| $20 - x = 18$ | $x \cdot 2 = 2$ | $10 + 2$ | $2 \cdot 2$ |
| $2 \cdot x = 12$ | $x - 2 = 6$ | $12 - 2$ | $16 - 2$ |
| $12 + x = 16$ | $x + 2 = 14$ | $6 : 2$ | $14 : 2$ |



- ⑨ Auf einem Feld arbeiten 2 Brigaden mit je 8 Bauern.
Wieviel Bauern arbeiten auf dem Feld?
- ⑩ Auf einem Feld arbeiten 5 Traktoren.
Nun fährt ein Traktor weg.
Wieviel Traktoren bleiben auf dem Feld?
- ⑪ 3 Kälber und 5 Schweine werden verkauft.
Wieviel Tiere werden verkauft?

Die Zahlen von 0 bis 100

Die Vielfachen von 10



					10	10	$1 \cdot 10 = 10$
					20	$10 + 10 = 20$	$2 \cdot 10 = 20$
					30	$20 + 10 = 30$	$3 \cdot 10 = 30$
					40	$30 + 10 = 40$	$4 \cdot 10 = 40$
					50	$40 + 10 = 50$	$5 \cdot 10 = 50$
					60	$50 + 10 = 60$	$6 \cdot 10 = 60$
					70	$60 + 10 = 70$	$7 \cdot 10 = 70$
					80	$70 + 10 = 80$	$8 \cdot 10 = 80$
					90	$80 + 10 = 90$	$9 \cdot 10 = 90$
					100	$90 + 10 = 100$	$10 \cdot 10 = 100$

10 20 30 40 50 60 70 80 90 100

10

10 10

10 10

10 10

$10 = 1 \cdot 10$

$20 = 10 + 10$

$20 = 2 \cdot 10$

10

$30 = 10 + 10 + 10$

$30 = 3 \cdot 10$

10 10

$40 = 10 + 10 + 10 + 10$

$40 = 4 \cdot 10$

Lege mit Zehnerstreifen!

① 30, 20, 50, 10, 70

② 40, 90, 60, 80, 100

Lege mit Rechengeld!

③ 20, 60, 90, 40, 10

④ 30, 70, 50, 80, 100



$3 \cdot 10 = 30$

$30 = 3 \cdot 10$

$30 = 20 + 10$

⑤ $4 \cdot 10$

⑥ $8 \cdot 10$

⑦ 20

⑧ 100

⑨ 70

⑩ 50

$7 \cdot 10$

$6 \cdot 10$

50

40

40

20

$2 \cdot 10$

$10 \cdot 10$

70

80

60

100

$x \cdot 10 = 40$
 $x = 4$

⑪ $x \cdot 10 = 50$ ⑫ $x \cdot 10 = 20$

$x \cdot 10 = 30$

$x \cdot 10 = 80$

denn $4 \cdot 10 = 40$

$x \cdot 10 = 70$

$x \cdot 10 = 100$

$50 = x \cdot 10$
 $x = 5$

⑬ $30 = x \cdot 10$ ⑭ $80 = x \cdot 10$ ⑮ $100 = x \cdot 10$

$70 = x \cdot 10$

$40 = x \cdot 10$

$60 = x \cdot 10$

denn $50 = 5 \cdot 10$

$20 = x \cdot 10$

$10 = x \cdot 10$

$90 = x \cdot 10$

⑯

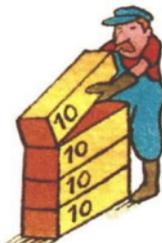
a	$a \cdot 10$
6	
3	
9	
2	

⑰

e	$e \cdot 10$
4	
1	
5	
10	

⑱

u	$u + 10$
40	
10	
70	
0	



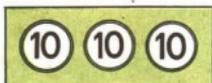
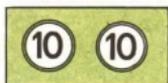


$$10 \cdot 10 \text{ Pf} = 100 \text{ Pf}$$



1 M

100 Pf = 1 M 100 Pfennig ist gleich 1 Mark.



Lege und vergleiche!

20 Pf sind weniger als 30 Pf.

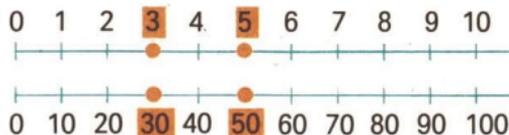
30 Pf sind mehr als 20 Pf.

① 30 Pf und 50 Pf

70 Pf und 40 Pf

80 Pf und 90 Pf

$3 < 5$	$5 > 3$
$30 < 50$	$50 > 30$



Vergleiche!

② 2 6 | 7 4 | 8 6 | 5 9

20 60 | 70 40 | 80 60 | 50 90

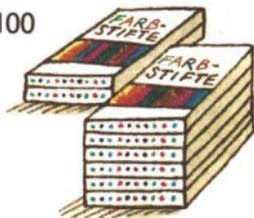
③ 40 80 | 60 90 | 50 20 | 70 100

Ordne!

④ 30, 20, 60, 50, 10 ⑤ 80, 60, 70, 40, 90

Zähle!

⑥ 10, 20, 30, ..., 100 ⑦ 100, 90, 80, ..., 10



Wiederhole!

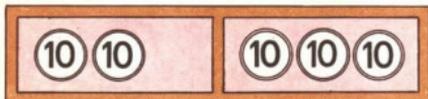
⑧ $8 + 3$ | $4 + 7$ ⑨ $12 - 5$ | $11 - 4$ ⑩ $4 + 3 + 6$

$7 + 6$ | $6 + 9$ $16 - 9$ | $15 - 8$ $13 - 7 - 5$

$9 + 5$ | $7 + 8$ $13 - 7$ | $14 - 6$ $6 + 8 - 7$

$20 + 30$

$50 - 30$



$20 + 30 = 50$

$50 - 30 = 20$

denn $2 + 3 = 5$ denn $5 - 3 = 2$

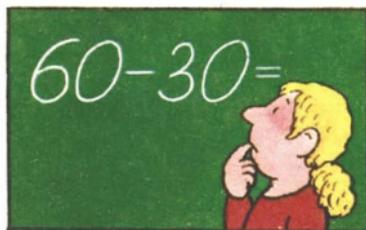
$$\textcircled{1} \begin{array}{r|l} 50 + 30 & 70 + 20 \\ 5 + 3 & 7 + 2 \end{array} \quad \begin{array}{r|l} 20 + 50 & 60 - 40 \\ 2 + 5 & 6 - 4 \end{array} \quad \begin{array}{r|l} 70 - 30 & 90 - 40 \\ 7 - 3 & 9 - 4 \end{array}$$

$$\textcircled{3} \begin{array}{r} 30 + 20 \\ 50 + 40 \\ 30 + 50 \end{array} \quad \textcircled{4} \begin{array}{r} 60 + 20 \\ 40 + 40 \\ 30 + 60 \end{array} \quad \textcircled{5} \begin{array}{r} 50 + 20 \\ 40 + 50 \\ 70 + 20 \end{array} \quad \textcircled{6} \begin{array}{r} 80 - 30 \\ 90 - 50 \\ 50 - 40 \end{array} \quad \textcircled{7} \begin{array}{r} 70 - 40 \\ 90 - 60 \\ 60 - 50 \end{array} \quad \textcircled{8} \begin{array}{r} 90 - 30 \\ 70 - 50 \\ 80 - 70 \end{array}$$

$$\begin{array}{r} 40 - 30 = 10 \\ 10 + 30 = 40 \end{array}$$

$$\textcircled{9} \begin{array}{r|l} 60 - 30 & 80 - 50 \\ 90 - 70 & 30 - 20 \end{array} \quad \begin{array}{r|l} 70 - 20 & 100 - 40 \end{array}$$

a	$a + 30$	e	$e - 30$
30		60	
20		90	
60		70	
40		100	



$$\textcircled{12} \begin{array}{r} 40 + x = 70 \\ 50 + x = 90 \\ 20 + x = 80 \end{array} \quad \textcircled{13} \begin{array}{r} x + 30 = 50 \\ x + 20 = 60 \\ x + 60 = 90 \end{array} \quad \textcircled{14} \begin{array}{r} 70 - x = 50 \\ 60 - x = 10 \\ 80 - x = 40 \end{array} \quad \textcircled{15} \begin{array}{r} x - 30 = 10 \\ x - 20 = 60 \\ x - 40 = 30 \end{array}$$

$$\begin{array}{r} 70 < 90 \\ 70 + 20 = 90 \\ 80 > 60 \\ 80 = 60 + 20 \end{array}$$

Vergleiche!

$$\textcircled{16} \begin{array}{r} 20 \\ 40 \\ 60 \end{array} \quad \begin{array}{r} 60 \\ 70 \\ 30 \end{array} \quad \textcircled{17} \begin{array}{r} 80 \\ 50 \\ 30 \end{array} \quad \begin{array}{r} 20 \\ 10 \\ 70 \end{array} \quad \textcircled{18} \begin{array}{r} 40 \\ 20 \\ 100 \end{array} \quad \begin{array}{r} 90 \\ 50 \\ 30 \end{array}$$

Das Meter

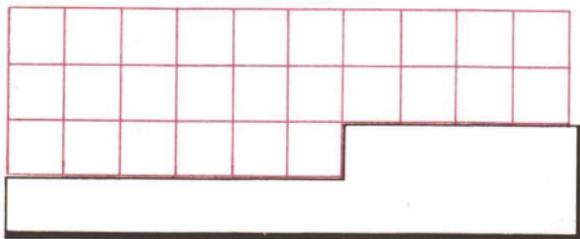


1 m
ein Meter

1 m = 100 cm

- ① Miß mit einem Meterstab oder einem Bindfaden von 1 m Länge,
 - wie lang und wie breit euer Wohnzimmer,
 - wie lang eure Wäscheleine ist!
- ② Schätze, ob die Tür eures Klassenzimmers
 - breiter oder schmaler,
 - höher oder niedriger als 1 m ist! Miß nach!
- ③ Stelle fest, wieviel Schritte du brauchst, um eine Strecke von 10 m Länge abzuschreiten!
- ④ $14\text{ m} + 3\text{ m}$ ⑤ $17\text{ m} - 4\text{ m}$ ⑥ $30\text{ m} + 40\text{ m}$ ⑦ $80\text{ m} - 70\text{ m}$
 $12\text{ m} + 4\text{ m}$ $16\text{ m} - 5\text{ m}$ $20\text{ m} + 60\text{ m}$ $90\text{ m} - 50\text{ m}$
 $13\text{ m} + 5\text{ m}$ $18\text{ m} - 2\text{ m}$ $40\text{ m} + 20\text{ m}$ $100\text{ m} - 80\text{ m}$
- ⑧ Udos Drachenschnur ist 15 m lang.
Er knüpft noch ein Stück von 5 m Länge an.
Wie lang ist nun die Drachenschnur?
- ⑨ Auf dem Sportplatz sind zwei Laufstrecken abgesteckt.
Eine ist 60 m lang, die zweite ist 40 m länger.
Wie lang ist die zweite Laufstrecke?
- ⑩ Werner und Rudi basteln Wimpelketten.
Werner sagt: „Meine Kette ist 1 m lang.“
Rudi behauptet: „Ich war fleißiger, denn meine Kette ist schon 100 cm lang.“
Hat Rudi recht?

Alle Zahlen von 0 bis 100



$$\begin{array}{|c|c|c|c|} \hline 20 & + & 6 & = & 26 \\ \hline 26 & = & 20 & + & 6 \\ \hline \end{array}$$

$$26 = 2 \cdot 10 + 6$$

Zeige am Hunderterquadrat!

① 34, 47, 29, 76, 67

② 85, 52, 98, 13, 31

Lege mit Ziffernkarten!

③ 18, 24, 35, 67, 42

④ 81, 63, 29, 38, 92

Lies und schreibe!

⑤ 28, 82, 74, 47, 66

⑥ 93, 39, 51, 15, 77

$$30 + 6 = 36$$

$$47 = 40 + 7$$

⑦ $30 + 5$

⑧ $20 + 9$

⑨ $50 + 4$

⑩ $80 + 8$

⑪

⑫

⑬

⑭

$30 + 5$

$20 + 9$

$50 + 4$

$80 + 8$

38

64

97

21

$60 + 3$

$80 + 1$

$90 + 5$

$40 + 6$

45

37

43

94

$40 + 7$

$10 + 8$

$20 + 3$

$70 + 3$

84

56

65

49

$70 + 2$

$90 + 6$

$70 + 9$

$30 + 4$

71

83

86

54

$50 + 8$

$60 + 7$

$40 + 2$

$50 + 9$

93

51

69

75

① Lege mit Rechengeld!

② Trage in eine Tabelle ein!

⑩	①
2	3
3	4
4	1

⑩	①	①	⑩ ⑩
⑩	①	①	⑩ ⑩
⑩	①	①	① ① ①



10	1	
4	7	$47 = 4 \cdot 10 + 7$
6	2	$62 = 6 \cdot 10 + 2$
5	8	$58 = 5 \cdot 10 + 8$



Trage in eine Stellentafel ein!

③	91	73	④	57	72
	89	36		96	41

$$53 = 5 \cdot 10 + 3$$

⑤	42	74	⑥	66	23	⑦	97	83
	93	38		51	15		32	68
	26	85		48	84		55	19

$$6 \cdot 10 + 9 = 69$$

⑧	$2 \cdot 10 + 8$	⑨	$7 \cdot 10 + 6$	⑩	$1 \cdot 10 + 7$
	$4 \cdot 10 + 5$		$9 \cdot 10 + 2$		$5 \cdot 10 + 6$
	$6 \cdot 10 + 4$		$3 \cdot 10 + 1$		$8 \cdot 10 + 3$

⑪

b	$30 + b$
5	
2	
4	
7	
1	

⑫

b	$80 + b$
6	
5	
3	
8	
4	

⑬

a	$a \cdot 10$
2	
6	
9	
3	
1	



$$\begin{array}{|c|c|c|c|} \hline 30 & + & x & = & 37 \\ \hline & & x & = & 7 \\ \hline \end{array}$$

denn $30 + 7 = 37$

① $40 + x = 45$

$20 + x = 29$

$70 + x = 77$

$50 + x = 52$

② $60 + x = 68$

$10 + x = 16$

$30 + x = 34$

$80 + x = 89$

$$\begin{array}{|c|c|c|c|} \hline x & + & 3 & = & 53 \\ \hline & & x & = & 50 \\ \hline \end{array}$$

denn $50 + 3 = 53$

③ $x + 4 = 84$

$x + 3 = 23$

$x + 7 = 47$

$x + 5 = 75$

④ $x + 1 = 31$

$x + 6 = 56$

$x + 2 = 82$

$x + 9 = 49$

⑤ $x + 8 = 18$

$x + 5 = 95$

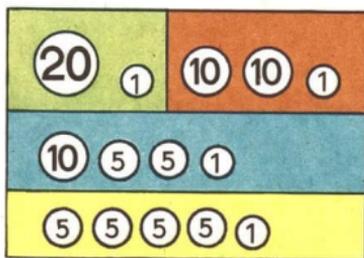
$x + 6 = 36$

$x + 3 = 53$

Geldbeträge kann man auf verschiedene Weise mit Münzen zahlen.



Beispiel: 21 Pf



- ⑥ Gib verschiedene Möglichkeiten an, wie du die folgenden Beträge mit Münzen zahlen kannst!

17 Pf, 28 Pf, 45 Pf, 50 Pf, 32 Pf, 70 Pf, 1 M



$$20 + 5 = 25$$

Peter kauft eine Briefmarke zu 20 Pf und eine Briefmarke zu 5 Pf.

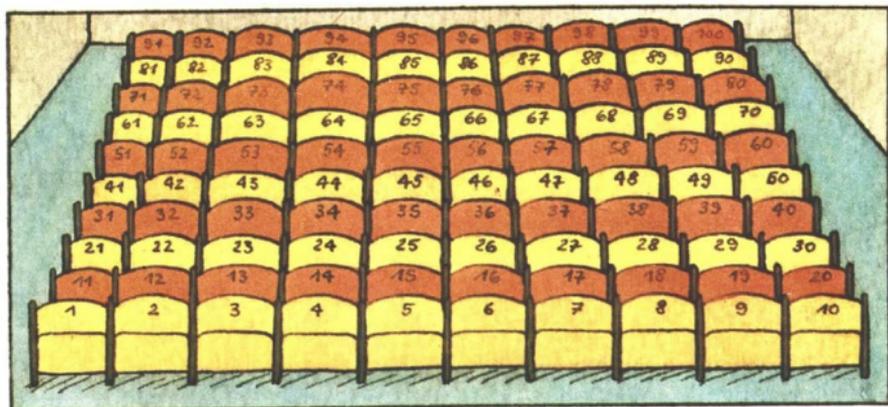
Wieviel Geld muß Peter zahlen?

Peter muß 25 Pf zahlen.

- ⑦ Doris hat 40 M gespart. Gisa hat schon 3 M mehr gespart als Doris.

Wieviel Geld hat Gisa gespart?

Die Ordnung der Zahlen von 0 bis 100



Vergleiche!

0 < 1	10 < 11	20 < 21	① 30	31	② 70	71	③ 90	91
1 < 2	11 < 12	21 < 22	31	32	71	72	91	92
2 < 3	12 < 13	22 < 23	32	33	72	73	92	93
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
9 < 10	19 < 20	29 < 30	39	40	79	80	99	100

Zähle!

- ④ von 21 bis 30 ⑤ von 39 bis 30 ⑥ von 25 bis 34
 von 81 bis 90 von 59 bis 50 von 17 bis 26
 von 91 bis 100 von 79 bis 70 von 53 bis 62

		35		
		35 < 36		
34 < 35				

Bestimme den Nachfolger!

- ⑦ 5, 25, 35, 55 ⑧ 43, 83, 73, 23
 ⑨ 27, 83, 65, 72 ⑩ 39, 59, 79, 99

Bestimme den Vorgänger!

- ⑪ 7, 17, 27, 67 ⑫ 1, 11, 21, 51
 ⑬ 53, 84, 26, 37 ⑭ 80, 70, 90, 30

Wir vergleichen

32 und 37

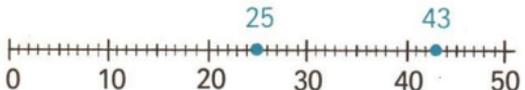
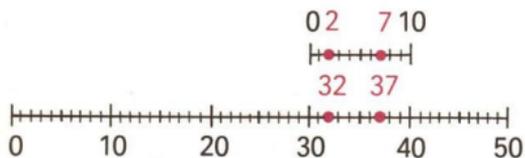
$$\begin{array}{l} 2 < 7 \\ 32 < 37 \end{array}$$

$$\begin{array}{l} 7 > 2 \\ 37 > 32 \end{array}$$

25 und 43

$$\begin{array}{l} 20 < 40 \\ 25 < 43 \end{array}$$

$$\begin{array}{l} 40 > 20 \\ 43 > 25 \end{array}$$



54	<	58
4	<	8

46	>	41
6	>	1

27	<	75
20	<	70

83	>	69
80	>	60

Vergleiche!

- | | | | | | | | | | |
|-----|----|-----|----|-----|----|------|----|------|----|
| ① 6 | 9 | ② 8 | 4 | ③ 2 | 7 | ④ 30 | 40 | ⑤ 90 | 50 |
| 16 | 19 | 38 | 34 | 62 | 67 | 32 | 42 | 94 | 56 |
| 26 | 29 | 78 | 74 | 92 | 97 | 38 | 48 | 98 | 53 |

Vergleiche!

- | | | | | | | | | | |
|------|----|------|----|------|----|------|----|------|----|
| ⑥ 46 | 43 | ⑦ 28 | 24 | ⑧ 42 | 72 | ⑨ 23 | 57 | ⑩ 37 | 16 |
| 72 | 74 | 93 | 95 | 83 | 53 | 79 | 49 | 29 | 44 |
| 55 | 59 | 39 | 36 | 35 | 65 | 51 | 93 | 95 | 87 |
| 87 | 81 | 14 | 17 | 74 | 44 | 62 | 28 | 52 | 18 |

Ordne! Beginne mit der kleinsten Zahl!

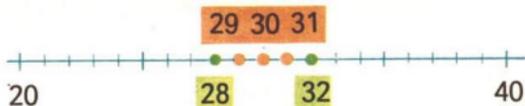
- | | |
|----------------------|----------------------|
| ⑪ 73, 78, 72, 75, 71 | ⑫ 28, 18, 78, 98, 48 |
| ⑬ 58, 56, 17, 12, 52 | ⑭ 70, 75, 30, 35, 50 |

Ordne! Beginne mit der größten Zahl!

- | | |
|----------------------|----------------------|
| ⑮ 42, 45, 41, 48, 43 | ⑯ 56, 96, 66, 26, 16 |
| ⑰ 35, 74, 79, 24, 28 | ⑱ 41, 72, 53, 34, 85 |

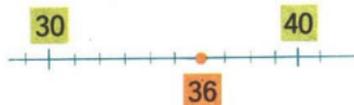


Zwischen 28 und 32
liegen 29, 30, 31.



Welche Zahlen liegen zwischen

- ① 34 und 37 ② 86 und 89 ③ 70 und 76 ④ 18 und 23
41 und 45 53 und 58 94 und 100 69 und 75?



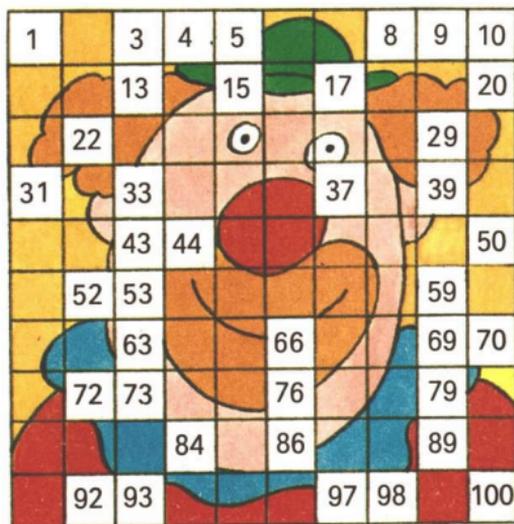
36 liegt zwischen 30 und 40.

- Zwischen welchen Vielfachen von 10 liegen die folgenden Zahlen ?
- | | | | | |
|----|----|----|----|----|
| ⑤ | ⑥ | ⑦ | ⑧ | ⑨ |
| 48 | 22 | 56 | 17 | 19 |
| 73 | 88 | 65 | 34 | 91 |

Einige Kinder spielen mit einem Legespiel.

Auf Franks Kärtchen stehen die folgenden Aufgaben.

Rechne und zeige, auf welches Feld er das Kärtchen jeweils legen kann!



- ⑩ $8 + 7$ ⑪ $9 - 5$
 $4 + 5$ $12 - 7$
 $3 + 7$ $15 - 7$

- ⑫ $20 + 9$ ⑬ $40 + 3$
 $60 + 3$ $90 + 3$
 $70 + 9$ $30 + 7$

- ⑭ Welche Felder sind schon belegt?

- ⑮ Zeige das 3., 9., 17., 24., 38., 45., 71., 83. Feld!

Was wir bereits wissen und können

0, 1, 2, 3, 4, ..., 98, 99, 100 sind natürliche Zahlen.
Die natürlichen Zahlen sind der Größe nach geordnet.

Zähle! ① von 7 bis 16 ② von 26 bis 35 ③ von 48 bis 57
④ von 12 bis 3 ⑤ von 45 bis 36 ⑥ von 74 bis 65

Jede natürliche Zahl
(außer 0) hat einen
Vorgänger.

$$\boxed{63}$$
$$62 < 63 < 64$$

Jede natürliche Zahl
hat einen
Nachfolger.

Bestimme bei den folgenden Zahlen den Vorgänger
und den Nachfolger!

⑦ 14, 65, 48, 58, 73 ⑧ 21, 49, 71, 59, 99 ⑨ 10, 60, 30, 70, 90

Natürliche Zahlen kann man
vergleichen.

$$15 = 15$$
$$14 < 17, \text{ denn } 14 + 3 = 17$$
$$16 > 12, \text{ denn } 16 = 12 + 4$$

Vergleiche!

⑩ 6 9 ⑪ 30 70
7 5 80 20



⑫ 35 37 ⑬ 72 27
49 41 38 83

=

ist gleich

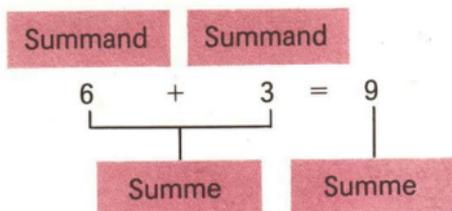
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ist kleiner als

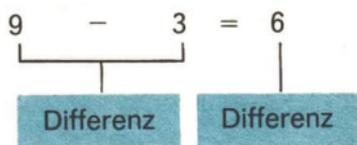
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ist größer als

Addieren



Subtrahieren



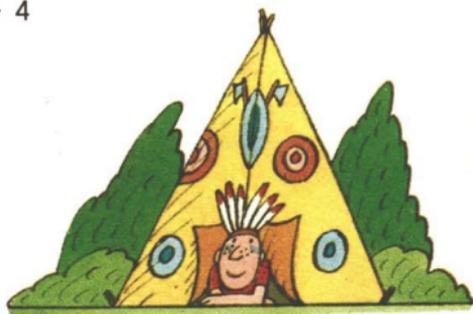
- ① $4 + 6$ ② $7 - 4$ ③ $9 - 5$ ④ $8 - 3$ ⑤ $4 - 3$ ⑥ $2 + 6$
 $9 - 7$ $6 + 8$ $7 + 2$ $11 - 4$ $8 + 4$ $10 - 4$
 $12 - 3$ $9 + 3$ $13 - 5$ $7 + 7$ $15 - 7$ $3 + 9$
 $8 + 5$ $14 - 6$ $4 + 8$ $16 - 9$ $5 + 8$ $17 - 8$

Lösen von Aufgaben, deren Ergebnisse nicht eingepreßt wurden

$16 + 3$	$17 - 4$	$50 + 20$	$80 - 30$
$\downarrow \quad \downarrow$ $6 + 3 = 9$ $16 + 3 = 19$	$\downarrow \quad \downarrow$ $7 - 4 = 3$ $17 - 4 = 13$	$\downarrow \quad \downarrow$ $5 + 2 = 7$ $50 + 20 = 70$	$\downarrow \quad \downarrow$ $8 - 3 = 5$ $80 - 30 = 50$

- ⑦ $12 + 4$ ⑧ $13 - 2$ ⑨ $14 + 3$ ⑩ $15 - 3$ ⑪ $16 + 3$
 $14 + 5$ $16 - 4$ $15 + 4$ $14 + 2$ $18 - 4$
 $18 + 2$ $18 - 5$ $17 + 3$ $19 - 4$ $12 + 5$
 $13 + 4$ $19 - 3$ $12 + 5$
 $11 + 5$ $15 - 4$ $11 + 4$

- ⑫ $90 - 40$ ⑬ $30 + 20$
 $40 + 30$ $60 - 50$
 $60 - 20$ $90 - 30$
 $30 + 50$ $70 - 50$
 $80 - 60$ $50 + 40$
 $50 - 50$ $80 - 70$



Summanden kann man vertauschen.
Die Summe ist gleich.

$$5 + 2 = 7 \longrightarrow 2 + 5 = 7$$

Zu Additionsgleichungen kann man Subtraktionsgleichungen bilden.

$$5 + 2 = 7 \begin{cases} \longrightarrow 7 - 2 = 5 \\ \searrow 7 - 5 = 2 \end{cases}$$

Löse die folgenden Aufgaben! Bilde stets mit denselben Zahlen drei weitere Gleichungen!

- ① $2 + 3$ ② $9 + 5$ ③ $30 + 20$ ④ $40 + 20$
 $7 + 6$ $7 + 8$ $70 + 30$ $80 + 20$



Überlege erst,

wie du die Aufgabe am einfachsten lösen kannst!

- ⑤ $14 + 5$ ⑥ $4 + 13$ ⑦ $60 + 3$ ⑧ $50 + 7$ ⑨ $7 + 11$
 $6 + 12$ $12 + 4$ $8 + 40$ $2 + 10$ $9 + 70$

Rechnen mit 0

$$a + 0 = a$$

$$a - 0 = a$$

$$0 + a = a$$

$$a - a = 0$$

- ⑩ $4 + 0$ ⑪ $7 - 0$ ⑫ $40 + 0$
 $8 + 0$ $3 - 0$ $70 - 0$
 $17 + 0$ $4 - 4$ $50 - 50$
 $0 + 12$ $18 - 18$ $100 + 0$

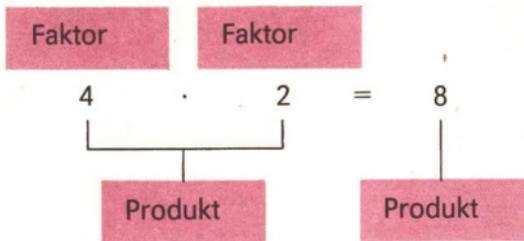
Summanden kann man beliebig zusammenfassen.
Die Summe ist gleich.

$$\begin{array}{r} \underline{4+3} + 2 \\ \underline{\quad 7} + 2 \\ \hline 9 \end{array} \quad \begin{array}{r} 4 + \underline{3+2} \\ 4 + \underline{\quad 5} \\ \hline 9 \end{array}$$

- ⑬ $4 + 2 + 3$ | $3 + 6 + 4$ ⑭ $12 + 5 + 2$ | $8 + 9 + 3$

Multiplizieren

Dividieren



$$8 : 2 = 4$$

- ① $7 \cdot 2$ ② $2 \cdot 2$ ③ $5 \cdot 10$ ④ $12 : 2$ ⑤ $8 \cdot 2$
 $8 : 2$ $8 \cdot 2$ $7 \cdot 10$ $6 \cdot 2$ $16 : 2$
 $9 \cdot 2$ $14 : 2$ $3 \cdot 10$ $18 : 2$ $10 \cdot 2$
 $6 : 2$ $10 : 2$ $10 \cdot 10$ $9 \cdot 2$ $20 : 2$

- ⑥ Bei welchen der Aufgaben ① bis ⑤ mußt du multiplizieren?
Nenne jeweils die Faktoren und das Produkt!
- ⑦ Bei welchen der Aufgaben ① bis ⑤ mußt du dividieren?

Faktoren kann man
vertauschen.
Das Produkt ist gleich.

$$4 \cdot 3 = 12 \longrightarrow 3 \cdot 4 = 12$$

Löse die folgenden Aufgaben! Bilde stets mit denselben Zahlen eine weitere Gleichung!

- ⑧ $3 \cdot 2$ ⑨ $6 \cdot 2$ ⑩ $7 \cdot 10$ ⑪ $9 \cdot 10$ ⑫ $7 \cdot 2$ ⑬ $3 \cdot 10$
 $5 \cdot 2$ $4 \cdot 2$ $2 \cdot 10$ $4 \cdot 10$ $1 \cdot 2$ $6 \cdot 10$
 $9 \cdot 2$ $8 \cdot 2$ $5 \cdot 10$ $8 \cdot 10$ $10 \cdot 2$ $1 \cdot 10$

Bilde Gleichungen!

- ⑭ $8 \cdot 2 = 10$ ⑮ $10 \cdot 2 = 20$ ⑯ $16 \cdot 7 = 9$ ⑰ $1 \cdot 9 = 10$
 $8 \cdot 2 = 16$ $10 \cdot 2 = 8$ $8 \cdot 5 = 13$ $2 \cdot 9 = 18$
 $8 \cdot 2 = 6$ $10 \cdot 2 = 5$ $5 \cdot 5 = 1$ $4 \cdot 2 = 8$

① $3 + 6$ ② $8 - 5$ ③ $6 + 7$ ④ $14 - 8$ ⑤ $6 \cdot 2$ ⑥ $16 : 2$
 $2 + 5$ $7 - 6$ $5 + 8$ $16 - 7$ $9 \cdot 2$ $20 : 2$
 $4 + 0$ $9 - 7$ $8 + 8$ $15 - 9$ $4 \cdot 2$ $14 : 2$
 $2 + 8$ $5 - 0$ $7 + 9$ $12 - 5$ $8 \cdot 2$ $18 : 2$

⑦ $14 + 2$ ⑧ $16 + 4$ ⑨ $18 - 3$ ⑩ $20 - 3$ ⑪ $18 - 7$ ⑫ $19 - 4$
 $18 + 1$ $12 + 8$ $17 - 4$ $20 - 5$ $14 + 3$ $16 - 5$
 $13 + 4$ $17 + 3$ $19 - 6$ $20 - 6$ $18 - 4$ $13 + 7$
 $12 + 7$ $14 + 6$ $16 - 5$ $20 - 8$ $13 + 6$ $15 + 3$

⑬ Von 15 Kindern einer Hortgruppe sind 8 Kinder Jungen.
Wieviel Kinder sind Mädchen?

⑭ $40 + 30$ ⑮ $90 - 10$ ⑯ $30 + 7$ ⑰ $12 + 4$ ⑱ $8 + 5$
 $30 + 40$ $80 - 20$ $50 + 3$ $12 - 4$ $8 - 5$
 $50 + 20$ $70 - 30$ $80 + 6$ $20 + 40$ $18 - 5$

<p>⑲</p> <table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">a</td> <td style="border-right: 1px solid black; padding: 5px;">e</td> <td style="padding: 5px;">$a + e$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">9</td> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">12</td> <td style="border-right: 1px solid black; padding: 5px;">7</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">5</td> <td style="border-right: 1px solid black; padding: 5px;">12</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">70</td> <td style="border-right: 1px solid black; padding: 5px;">20</td> <td style="padding: 5px;"></td> </tr> </table>	a	e	$a + e$	9	6		12	7		5	12		70	20		<p>⑳</p> <table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">m</td> <td style="border-right: 1px solid black; padding: 5px;">n</td> <td style="padding: 5px;">$m - n$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">8</td> <td style="border-right: 1px solid black; padding: 5px;">7</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">14</td> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">20</td> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">80</td> <td style="border-right: 1px solid black; padding: 5px;">30</td> <td style="padding: 5px;"></td> </tr> </table>	m	n	$m - n$	8	7		14	6		20	6		80	30		<p>㉑</p> <table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">u</td> <td style="padding: 5px;">$u : 2$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">8</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">4</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">10</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="padding: 5px;"></td> </tr> </table>	u	$u : 2$	8		4		10		6	
a	e	$a + e$																																								
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20	6																																									
80	30																																									
u	$u : 2$																																									
8																																										
4																																										
10																																										
6																																										

㉒ Norma hat 70 Pf. Sie kauft für 40 Pf Hefte.
Wieviel Geld behält Norma?

㉓ $a < 3$ ㉔ $4 > a$ ㉕ $3 + a < 7$ ㉖ $6 - a > 4$ ㉗ $8 - a > 4$
 $e < 2$ $2 > i$ $15 + a < 16$ $19 - a > 15$ $15 - a > 14$
 $i < 4$ $3 > u$ $6 + a < 10$ $5 - a > 2$ $18 - a > 15$

㉘ $4 + x = 7$ ㉙ $x + 3 = 7$ ㉚ $8 - x = 4$ ㉛ $x - 3 = 5$
 $6 + x = 10$ $x + 3 = 12$ $12 - x = 8$ $x - 4 = 16$
 $14 + x = 17$ $x + 8 = 20$ $19 - x = 13$ $x - 5 = 6$
 $8 + x = 12$ $x + 20 = 80$ $90 - x = 40$ $x - 20 = 50$

Länge

Zentimeter Meter

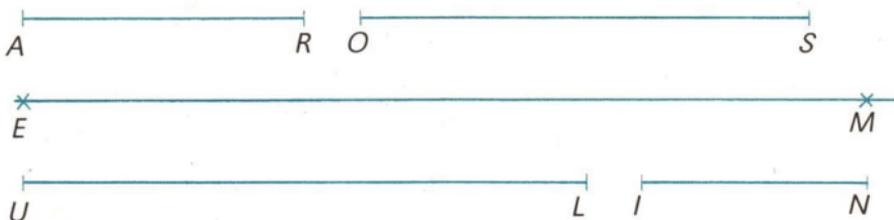
$$100 \text{ cm} = 1 \text{ m}$$

Geld

Pfennig Mark

$$100 \text{ Pf} = 1 \text{ M}$$

- ① Miß die Länge bei folgenden Strecken!



Zeige am Tafellineal oder Meßband die folgenden Längen!

- ② 4 cm, 40 cm, 70 cm, 20 cm, 100 cm, ③ 17 cm, 71 cm, 84 cm, 1 m

Zeichne Strecken in der angegebenen Länge!

- ④ 6 cm, 2 cm, 13 cm, 5 cm, 1 cm ⑤ 10 cm, 3 cm, 8 cm, 4 cm, 7 cm

- ⑥ 5 m + 4 m ⑦ 16 M - 6 M ⑧ 30 cm + 40 cm ⑨ 20 Pf + 5 Pf

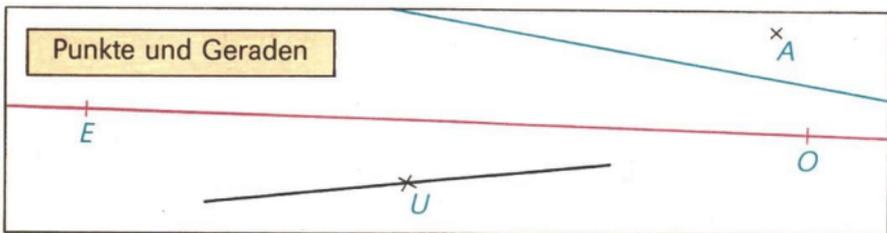
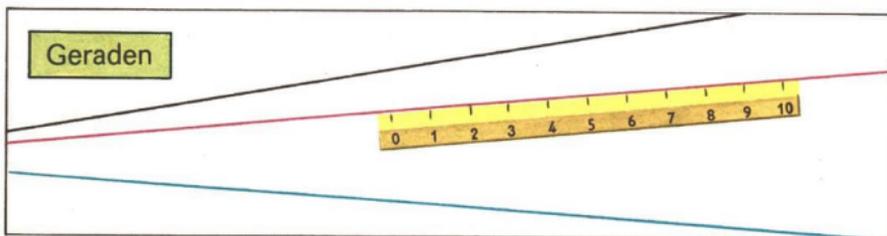
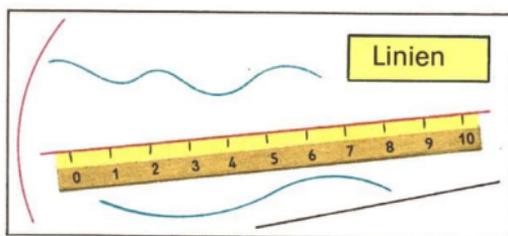
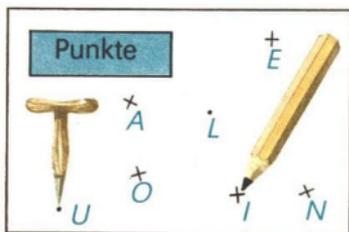
12 m - 3 m 19 M - 7 M 60 cm - 20 cm 70 Pf + 4 Pf

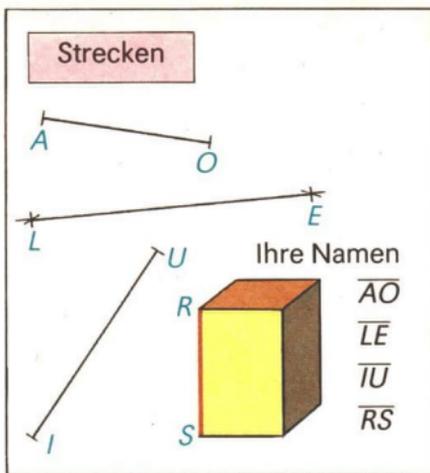
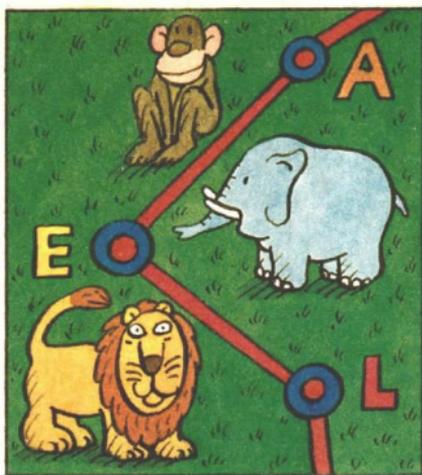
7 m + 6 m 14 M - 3 M 10 cm + 50 cm 30 Pf + 8 Pf

9 m - 7 m 20 M - 8 M 80 cm - 40 cm 50 Pf + 6 Pf

2 m + 8 m 15 M - 2 M 50 cm + 50 cm 90 Pf + 10 Pf

- ⑩ 60 Pioniere und 7 Lehrer wollen ins Ferienlager fahren.
Wieviel Plätze müssen bestellt werden?
- ⑪ In einem Lager sind 70 Pioniere. 40 davon sind Mädchen.
Wieviel Jungen sind im Lager?
- ⑫ In jedem Schlafrum stehen 10 Betten.
Das Lager hat 8 Schlafräume.
Wieviel Pioniere können zu gleicher Zeit die Ferien
hier verbringen?





- ① Zeige Strecken im Klassenzimmer!
- ② Zeichne 3 Strecken \overline{LM} , \overline{EF} , \overline{NU} !

Vergleichen von Strecken

\overline{EA} ist kürzer als \overline{OI} .

\overline{OI} ist länger als \overline{LU} .

\overline{EA} und \overline{LU} sind gleich lang.

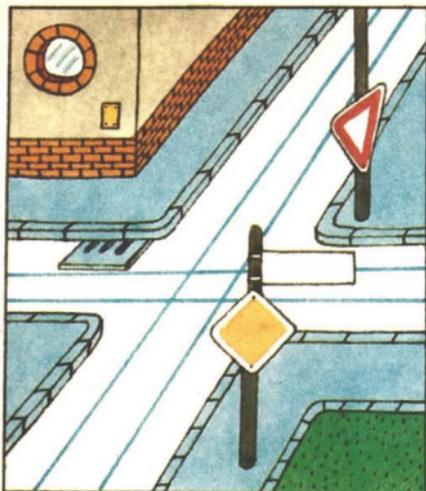
Vergleiche!

③

④

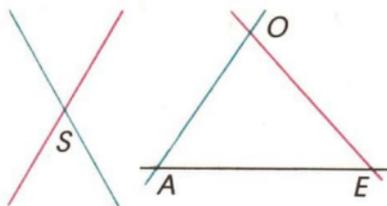
⑤





Geraden, die

einander schneiden



- ① Zeige auf dem Straßenbild Geraden, die einander schneiden!

Dreiecke

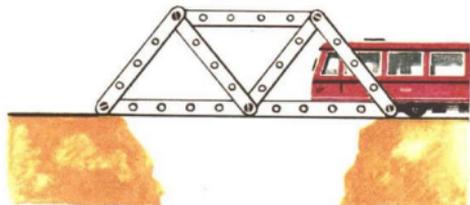
- ② Suche auf dem Straßenbild Dreiecke!
 ③ Zeichne mit der Schablone 3 Dreiecke!



- ④ Lege mit Stäbchen 2 Dreiecke!

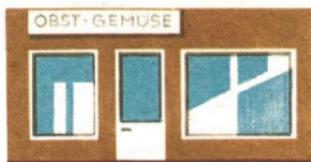
- ⑤ Verbinde 3 Flachstäbe so, daß ein Dreieck entsteht!

- ⑥ Wie viele Dreiecke erkennst du an dieser Brücke?

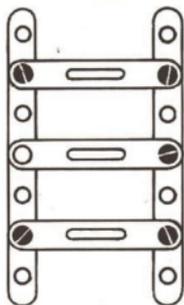
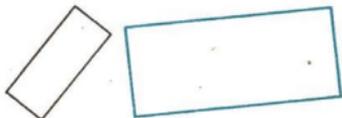
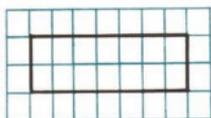


Rechtecke

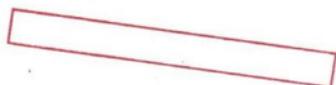
- ① Suche auf dem Straßenbild Rechtecke!



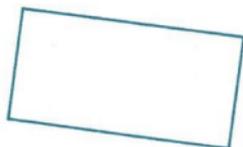
- ② Lege mit Stäbchen ein Rechteck!
③ Zeichne im Rechenheft 2 Rechtecke!



- ④ Zeichne mit der Schablone 6 Rechtecke!



- ⑤ Miß die Länge der Rechteckseiten!



Die gegenüberliegenden
Seiten eines Rechtecks
sind gleich lang.

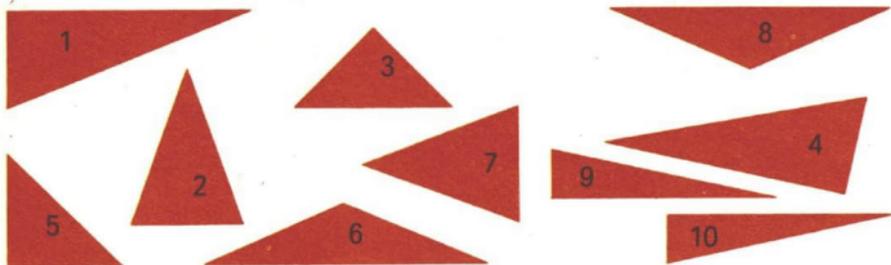
Kreise

- ⑥ Suche auf dem Straßenbild Kreise!

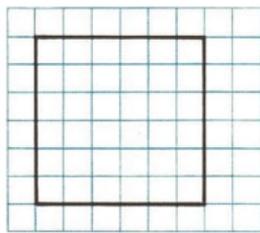
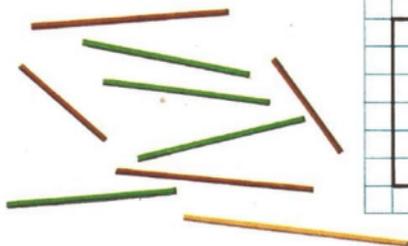
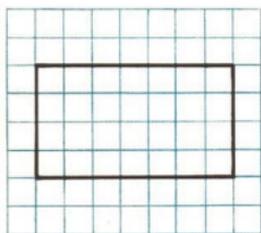


- ⑦ Zeichne mit der Schablone 3 Kreise!

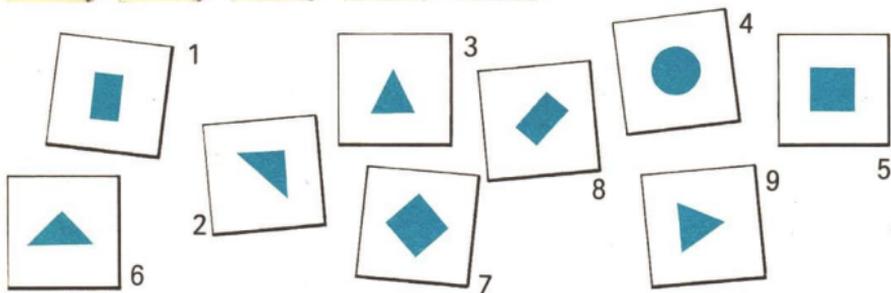
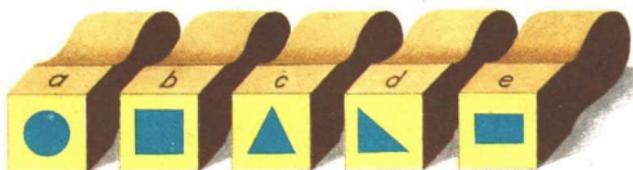
- ① Aus den folgenden Dreiecken kann man Rechtecke legen.
Welche Dreiecke gehören dabei jeweils zusammen?



- ② Mit welchen dieser Stäbchen kannst du die beiden Rechtecke legen?



- ③ Jörg hat für ein Legespiel Kärtchen bedruckt.
Welchen Stempel hat er dabei jeweils verwendet?

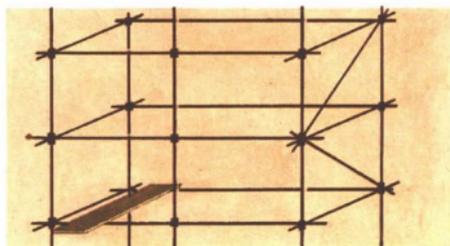


Was wir bereits wissen und können

Punkte	Geraden	Strecken	Würfel
Dreiecke	Rechtecke	Kreise	Kugeln

Zeige in diesem Bild

- ① Punkte, ② Strecken,
 ③ Dreiecke, ④ Rechtecke!



Zeichne

- ⑤ eine Strecke \overline{EA} ,
 ⑥ eine Strecke \overline{RS} , die länger ist als \overline{EA} !
 ⑦ Wieviel Dreiecke, Rechtecke und Kreise müßtest du aus Buntpapier ausschneiden, um die einzelnen Bilder legen zu können?



- ⑧ Zeichne auf Gitterpapier Rechtecke, Dreiecke und Kreise!
 Male sie aus! Schneide sie aus! Lege Bilder!



Vergleichen von Mengen	3
„weniger“, „mehr“, „gleich viel“	
Die natürlichen Zahlen von 1 bis 10	5
Die Zahlen von 1 bis 5	5
Vergleichen von Zahlen	9
„ist kleiner als“, „ist größer als“, „ist gleich“	
Addieren von Zahlen	13
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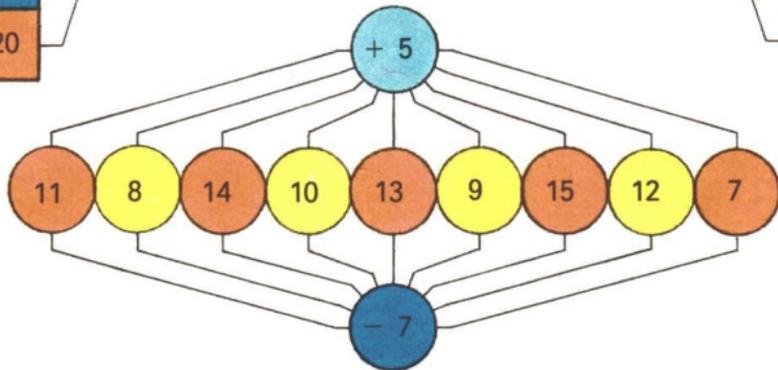
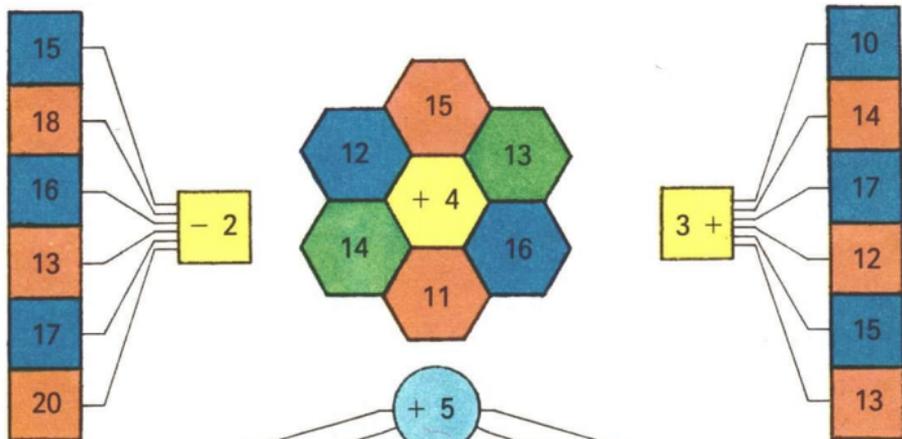
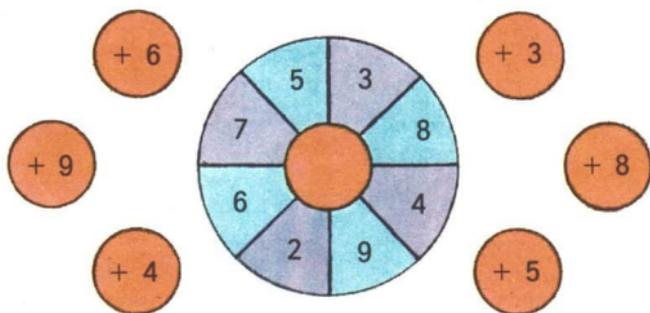
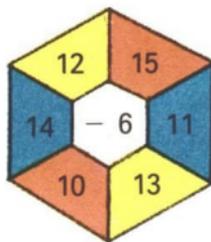
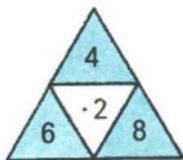
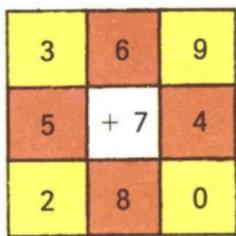
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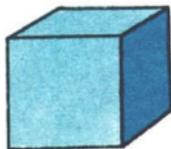
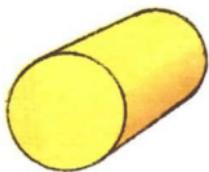
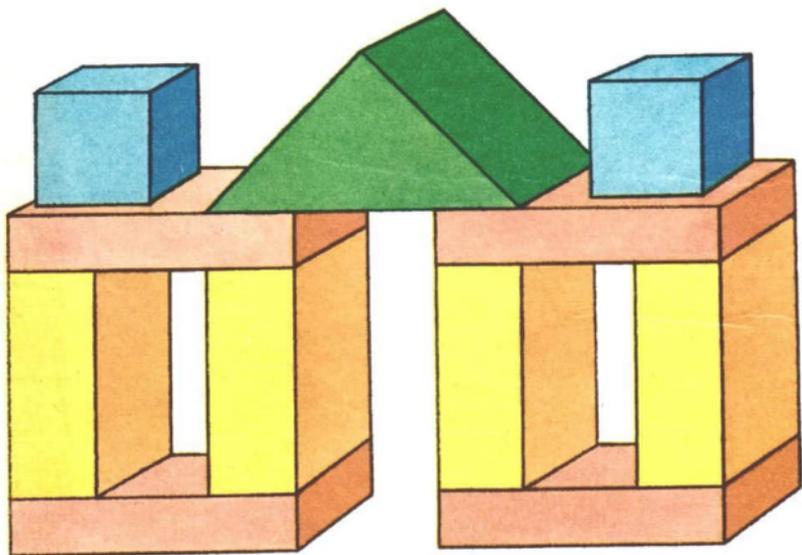
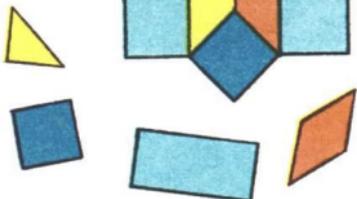
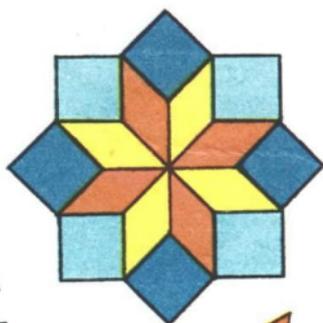
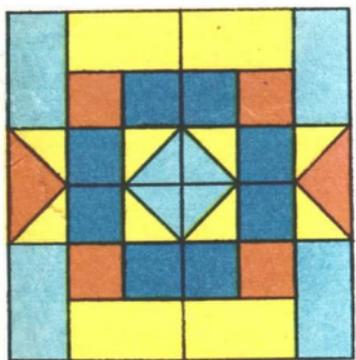
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