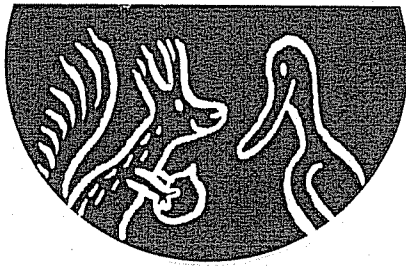


leerling:
groep:

maatwerk groen

onderdeel 3



in het bos

blok 2

eekhoorn

optelsommen tussen 10 en 20

werkbladen

computerprogramma

in het l 2 optelsom 21 t/m 32 eekhoorn 2a: optellen met geld
3
3 in het bos 2b: optelmachientje

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

$$f(x) = \int_0^x \frac{1}{1+t^2} dt$$

It is well known that this function is increasing and concave down on the interval $(-\infty, \infty)$. Moreover, it is bounded by the inequalities

$$0 < f(x) < \frac{\pi}{2} \quad \text{for all } x \in \mathbb{R}.$$

2. The second part of the paper is devoted to the study of the function

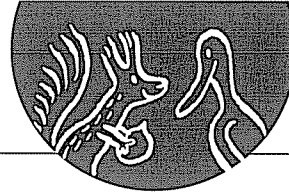
$$g(x) = \int_0^x \frac{1}{1+t^4} dt$$

It is well known that this function is increasing and concave down on the interval $(-\infty, \infty)$. Moreover, it is bounded by the inequalities

$$0 < g(x) < \frac{\pi}{4} \quad \text{for all } x \in \mathbb{R}.$$

3. The third part of the paper is devoted to the study of the function

$$h(x)$$



zoek de som.

je kunt kiezen uit:

$10 + 2$

$10 + 3$

$10 + 4$

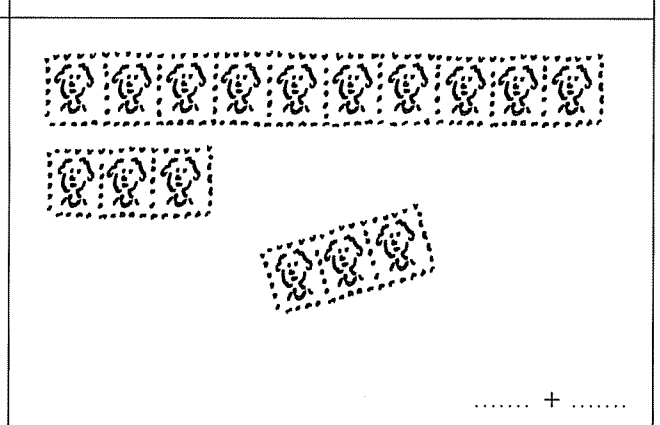
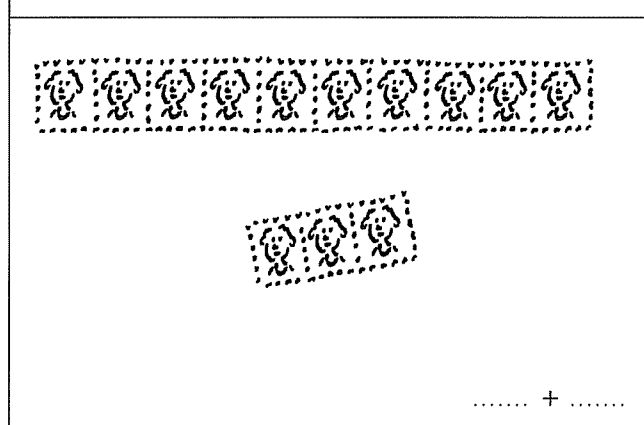
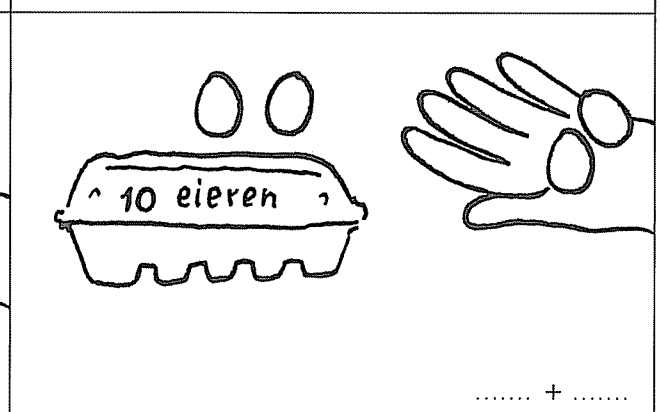
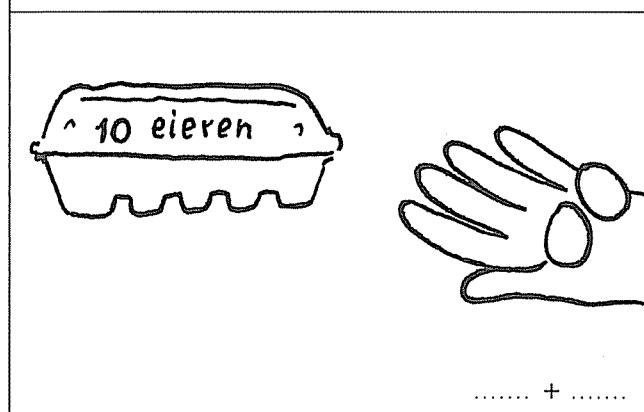
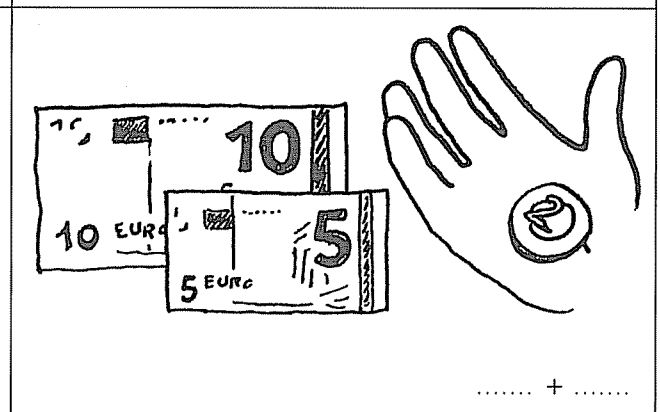
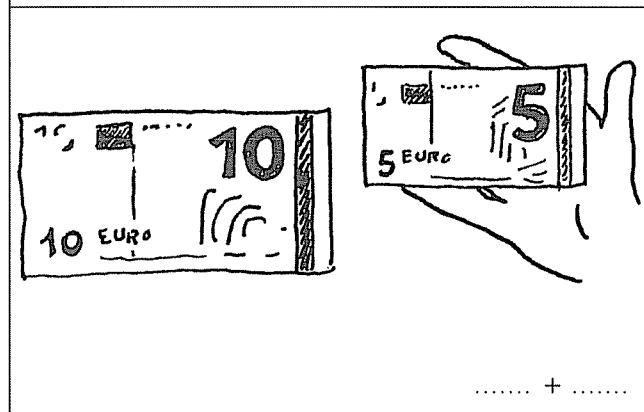
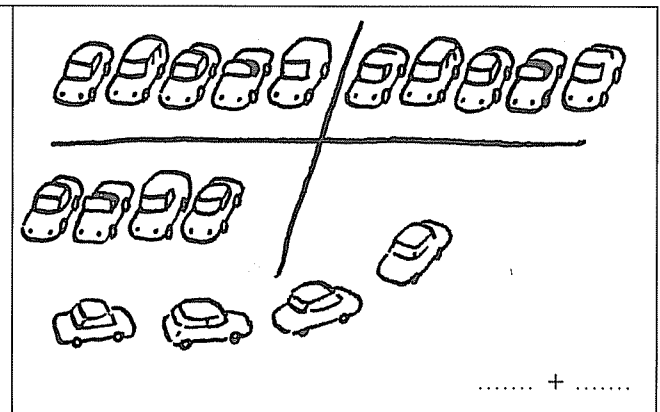
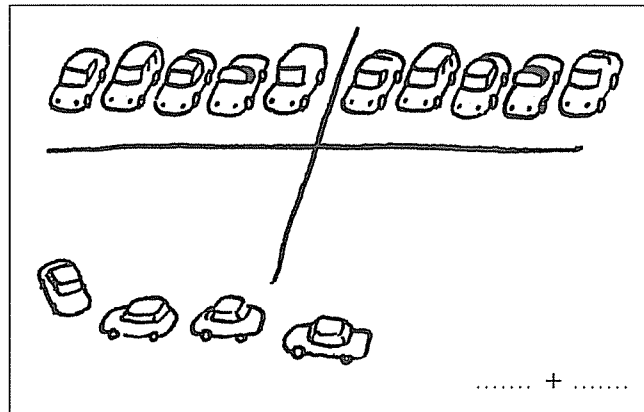
$10 + 5$

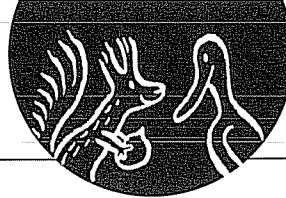
$12 + 2$

$13 + 3$

$14 + 4$

$15 + 2$





1 optel-tabellen.

+	4	2	6
3			
1			
4			

+	3	1	5
4			
3			
5			

+	5	3	4
3			
5			
4			



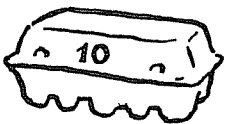
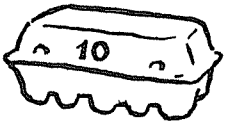
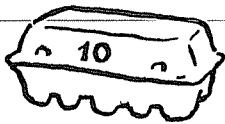
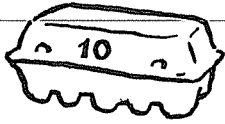
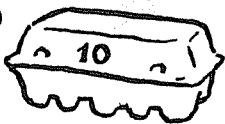
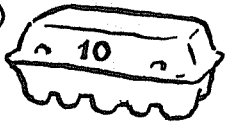
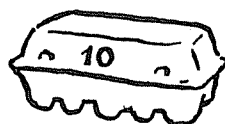
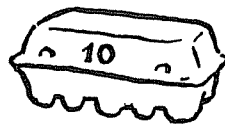
2 steeds twee sommen.

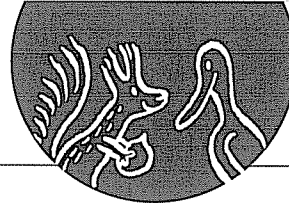
je hebt:

je krijgt erbij:

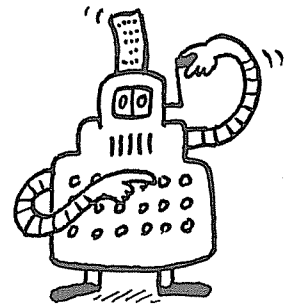
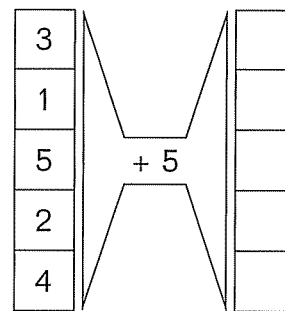
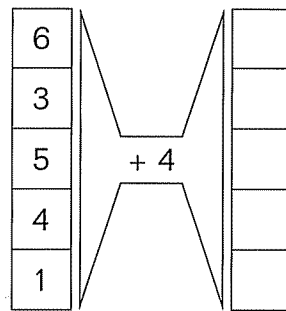
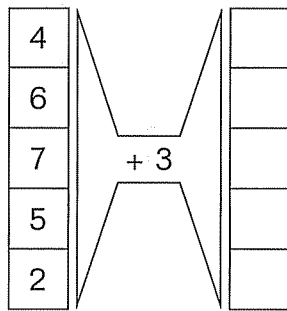
je hebt:

je krijgt erbij:

00	000	00000	00
	2 + 3 =		5 + 2 =
00	000	00000	00
	12 + 3 =		15 + 2 =
0000	0000	0	00000
	4 + 4 =		1 + 5 =
0000	0000	0	00000
	14 + 4 =		11 + 5 =
00000	0000	00000	00
0	6 + 4 =	00	7 + 2 =
00000	0000	00000	00
0	16 + 4 =	00	17 + 2 =
			
000	00000	0000	00000
	3 + 5 =		0 4 + 6 =
000	00000	0000	00000
	13 + 5 =		0 14 + 6 =



1 optel-machientjes.



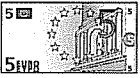
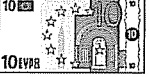
2 steeds twee sommen.

je hebt:

je krijgt erbij:

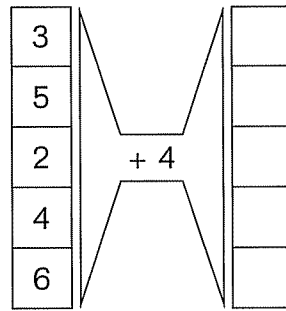
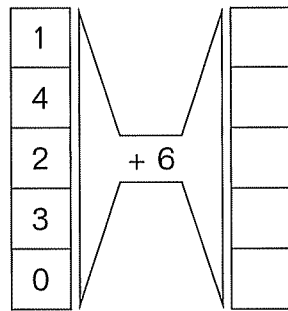
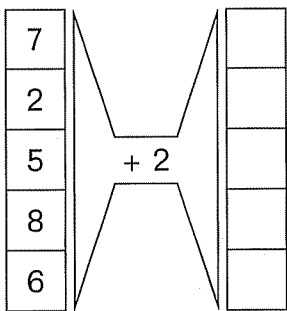
je hebt:

je krijgt erbij:

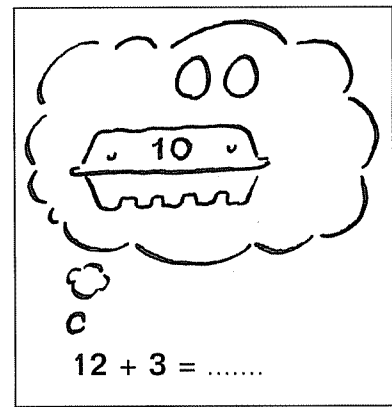
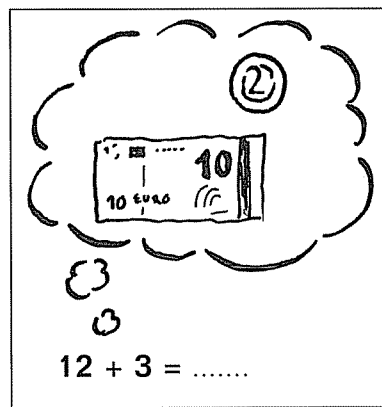
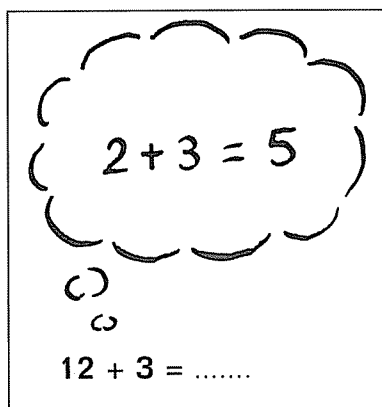
  $5 + 2 = \dots\dots$	       $4 + 3 = \dots\dots$
   $15 + 2 = \dots\dots$	        $14 + 3 = \dots\dots$
  $1 + 5 = \dots\dots$	     $2 + 4 = \dots\dots$
   $11 + 5 = \dots\dots$	      $12 + 4 = \dots\dots$
     $3 + 6 = \dots\dots$	     $7 + 3 = \dots\dots$
      $13 + 6 = \dots\dots$	     $17 + 3 = \dots\dots$
    $6 + 3 = \dots\dots$	   $3 + 5 = \dots\dots$
    $16 + 3 = \dots\dots$	    $13 + 5 = \dots\dots$



1 optel-machientjes.



2 reken handig.



$2 + 3 = \dots\dots$

$4 + 3 = \dots\dots$

$3 + 6 = \dots\dots$

$5 + 4 = \dots\dots$

$12 + 3 = \dots\dots$

$14 + 3 = \dots\dots$

$13 + 6 = \dots\dots$

$15 + 4 = \dots\dots$

$1 + 7 = \dots\dots$

$2 + 4 = \dots\dots$

$4 + 6 = \dots\dots$

$3 + 5 = \dots\dots$

$11 + 7 = \dots\dots$

$12 + 4 = \dots\dots$

$14 + 6 = \dots\dots$

$13 + 5 = \dots\dots$

$6 + 3 = \dots\dots$

$5 + 3 = \dots\dots$

$2 + 7 = \dots\dots$

$8 + 2 = \dots\dots$

$16 + 3 = \dots\dots$

$15 + 3 = \dots\dots$

$12 + 7 = \dots\dots$

$18 + 2 = \dots\dots$

$3 + 4 = \dots\dots$

$4 + 5 = \dots\dots$

$5 + 2 = \dots\dots$

$3 + 7 = \dots\dots$

$13 + 4 = \dots\dots$

$14 + 5 = \dots\dots$

$15 + 2 = \dots\dots$

$13 + 7 = \dots\dots$

$1 + 5 = \dots\dots$

$7 + 3 = \dots\dots$

$2 + 5 = \dots\dots$

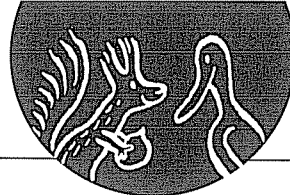
$6 + 2 = \dots\dots$

$11 + 5 = \dots\dots$

$17 + 3 = \dots\dots$

$12 + 5 = \dots\dots$

$16 + 2 = \dots\dots$



1 splitsen.

10	
4	
5	
6	
8	
3	

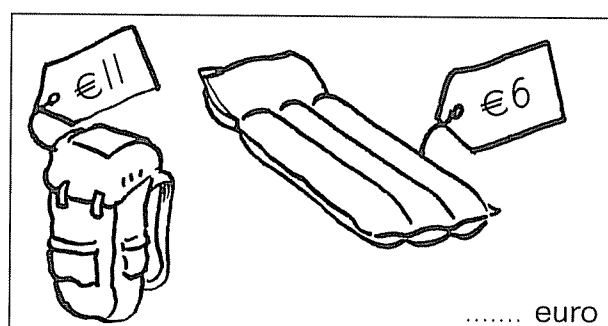
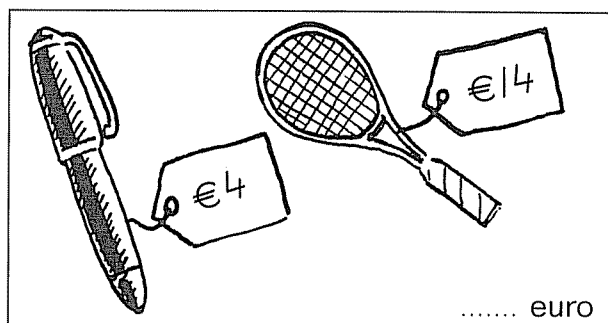
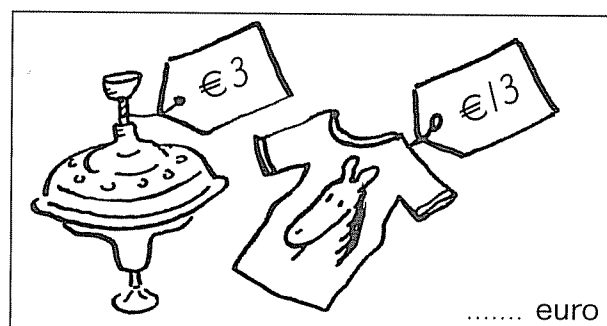
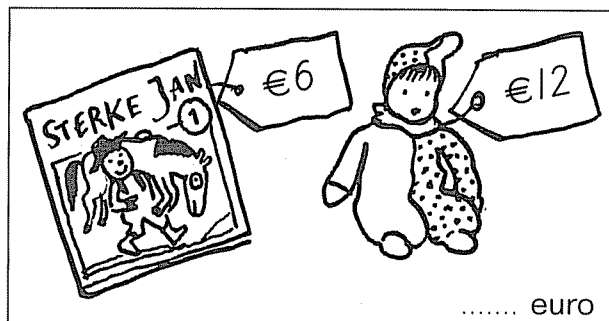
9	
6	
5	
4	
2	
3	

8	
4	
6	
3	
2	
5	

7	
4	
2	
5	
1	
3	



2 hoeveel kost het samen?



3 optel-tabellen.

+	2	3	4	5
5				
15				

+	2	3	4	5
4				
14				

+	15	13	12	14
3				
5				

+	14	13	15	12
2				
4				



**1 dubbelen en bijna-dubbelen.**

$4 + 4 = \dots\dots$

$2 + 2 = \dots\dots$

$3 + 3 = \dots\dots$

$5 + 5 = \dots\dots$

$4 + 5 = \dots\dots$

$3 + 2 = \dots\dots$

$3 + 4 = \dots\dots$

$5 + 6 = \dots\dots$

$5 + 4 = \dots\dots$

$2 + 3 = \dots\dots$

$4 + 3 = \dots\dots$

$6 + 5 = \dots\dots$

2 optel-machientjes.

1	+ 5	
11		

3	+ 4	
13		

8	+ 1	
18		

2	+ 3	
12		

3	+ 3	
13		

4	+ 5	
14		

3 nog meer optel-machientjes.

4	+ 14	
5		

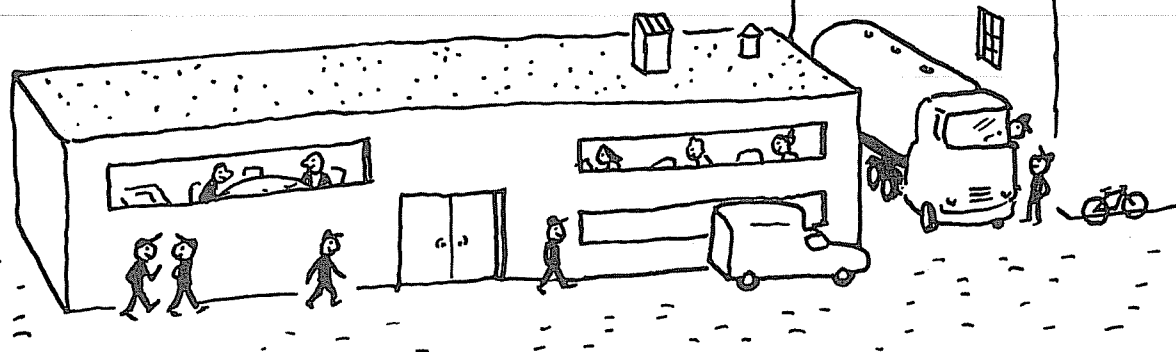
6	+ 13	
7		

4	+ 12	
7		

3	+ 16	
4		

2	+ 15	
3		

8	+ 11	
6		



1 maak sommen.

$$\dots\dots + \dots\dots = 10$$

..... + = 9

$$\dots\dots + \dots\dots = 8$$
$$\dots\dots + \dots\dots = 10$$
$$\dots\dots + \dots\dots = 9$$
$$\dots\dots + \dots\dots = 8$$
$$\dots\dots + \dots\dots = 10$$
$$\dots\dots + \dots\dots = 9$$
$$\dots\dots + \dots\dots = 8$$
$$\dots\dots + \dots\dots = 10$$
$$\dots\dots\dots + \dots\dots\dots = 9$$
$$\dots\dots + \dots\dots = 8$$
$$\dots\dots + \dots\dots = 10$$
$$\dots\dots\dots + \dots\dots\dots = 9$$
$$\dots\dots\dots + \dots\dots\dots = 8$$

2 wat komt eruit?

$1 + 0 =$	d
-----------	---

$2 + 3 =$	f
-----------	---

$3 + 4 =$	a
-----------	---

$4 + 5 =$	k
-----------	---

$10 + 0 =$	t
------------	---

$12 + 3 =$	f
------------	---

$13 + 5 =$	t
------------	---

$14 + 5 =$	e
------------	---

$1 + 1 =$	e
-----------	---

$3 + 3 =$	m
-----------	---

$1 + 2 =$	j
-----------	---

$2 + 2 =$	u
-----------	---

$11 + 1 =$	e
------------	---

$13 + 3 =$	0
------------	---

$11 + 2 =$	e
------------	---

$12 + 2 =$	n
------------	-----

$4 + 4 =$	a
-----------	---

$14 + 3 =$	u
------------	---

$5 + 6 =$	g
-----------	---

$15 + 5 =$	n
------------	-----



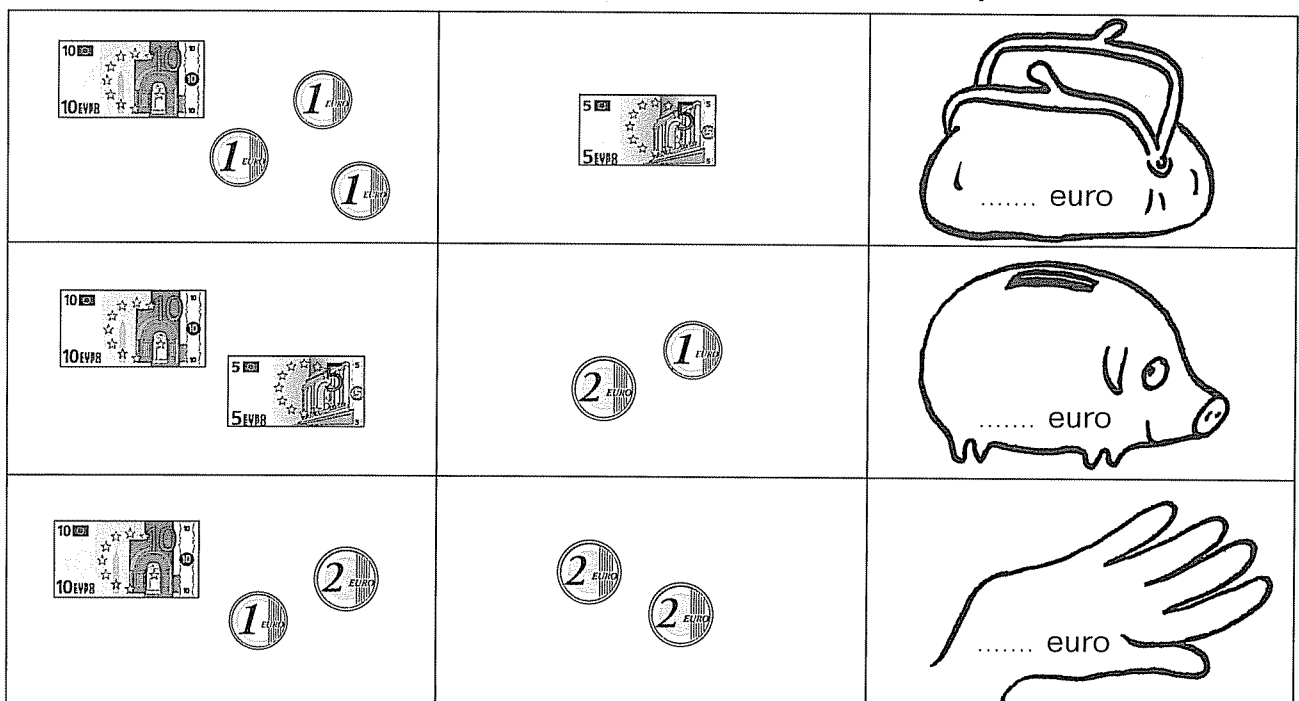
d																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

3 hoeveel heb je nu?

je hebt:

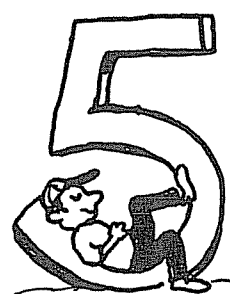
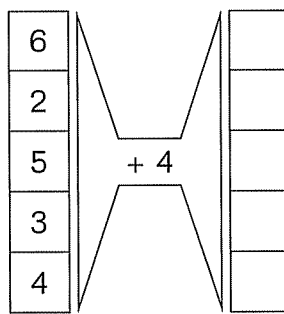
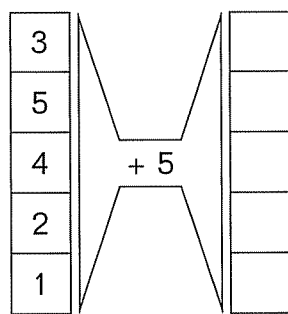
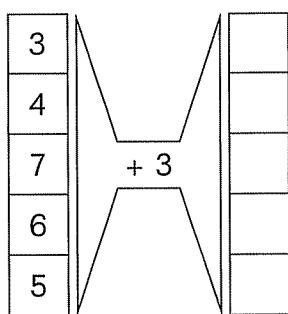
je krijgt erbij:

nu heb je:

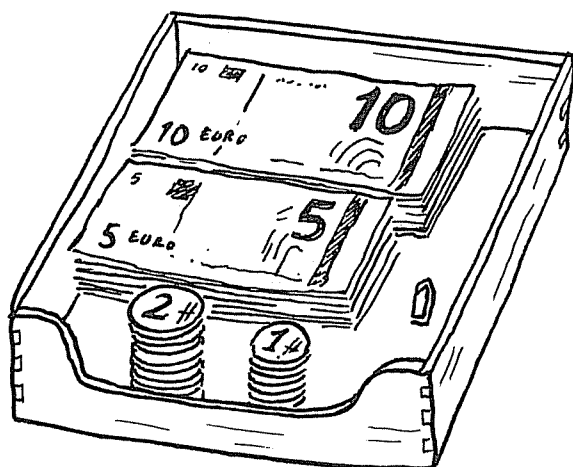




1 optel-machientjes.



2 zelf sommen maken met geld.



$12 + \dots = \dots$

$14 + \dots = \dots$

$12 + \dots = \dots$

$14 + \dots = \dots$

$15 + \dots = \dots$

$13 + \dots = \dots$

$15 + \dots = \dots$

$13 + \dots = \dots$

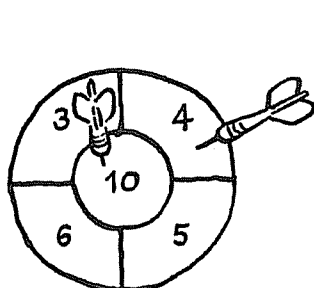
$11 + \dots = \dots$

$10 + \dots = \dots$

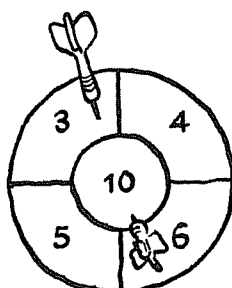
$11 + \dots = \dots$

$10 + \dots = \dots$

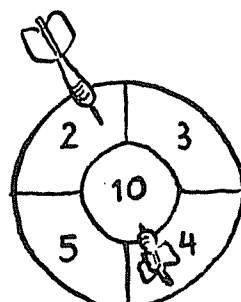
3 hoeveel punten gegoid?



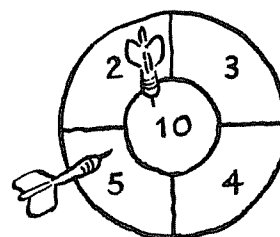
..... punten



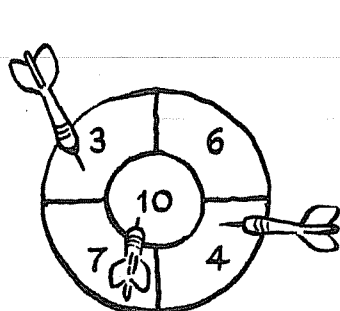
..... punten



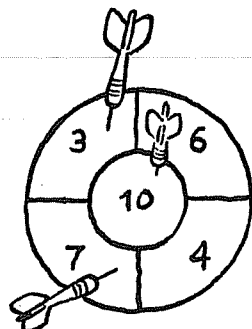
..... punten



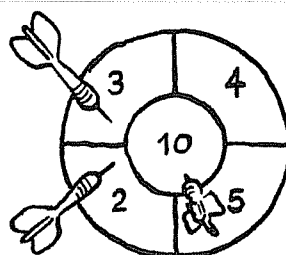
..... punten



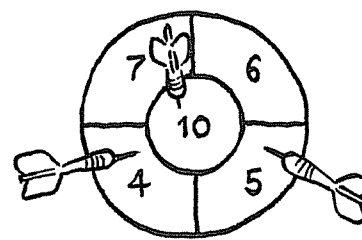
..... punten



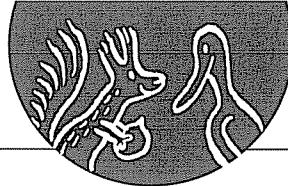
..... punten



..... punten

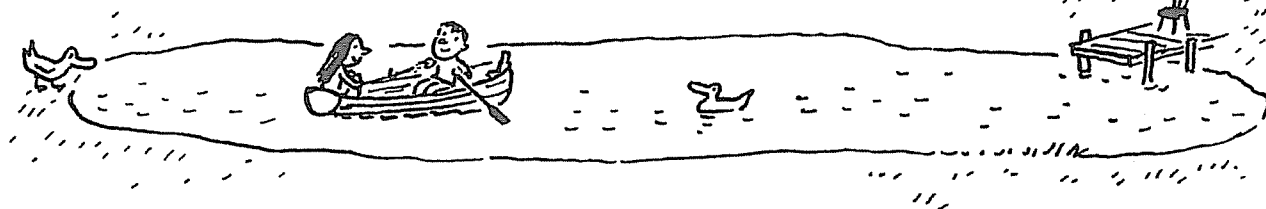
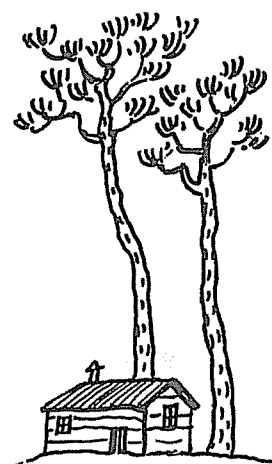


..... punten



1 maak er meer van.

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

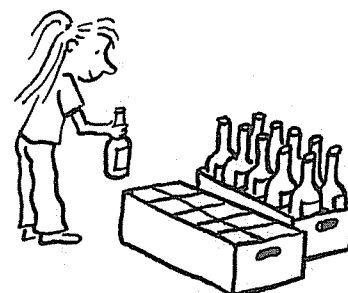


2 optel-machientjes.

11		5		13		3	
12		4		14		5	
13	+ 3	3	+ 13	15	+ 4	4	+ 14
14		2		12		6	
15		1		16		2	

3 hoeveel flesjes nu in de kratten?

eerst:	je zet erbij:	nu:
12 flesjes	5 flesjes	 flesjes
14 flesjes	3 flesjes	 flesjes
16 flesjes	3 flesjes	 flesjes
13 flesjes	4 flesjes	 flesjes
17 flesjes	2 flesjes	 flesjes
15 flesjes	5 flesjes	 flesjes





kies de goede kleur.

15 = groen

16 = geel

17 = oranje

18 = bruin

19 = rood

