wizSMART 2023

WereldWijde WiskundeWedstrijd

WWW.W4KANGOEROE.NL

W4Kangoeroe



Good luck and most of all have fun !

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calculators are not allowed

you may use 50 minutes

Only a pencil, an eraser and scribbling paper are allowed

results and prizes will arrive at school at the end of May

answers will be posted on the website about March 29th

solutions will be posted on the website about April 20th

wizSMART
vmbo 1 & 2
vmbo 3 & 4 basisberoepsgerichte leerweg

zwijsen
Breng leren tot leven
www.zwijsen.nl

NEMO
www.e-nemo.nl

Texas Instruments
www.education.ti.com

SMART GAMES
www.smart.be

Schoolsupport
www.schoolsupport.nl

ID Premiums Relatiegeschenken b.v.
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www.idpremiums.nl

mathplay
www.mathplay.eu

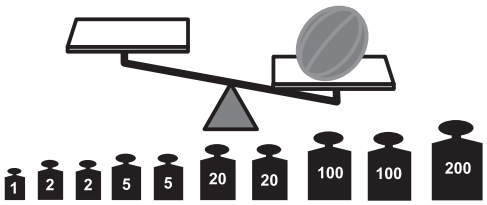
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wizSMART 2023

1. *Lucia* has a melon weighing 348 grams.
Next to the scale there are 10 weights



How many of these weights does she need to balance the scale?

A. 5 **B.** 6 **C.** 7 **D.** 8 **E.** 10

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2. Which of the shapes below can **not** be divided into 2 triangles with a single straight line?

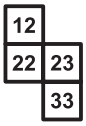
A.  **B.**  **C.**  **D.**  **E.** 

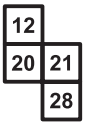
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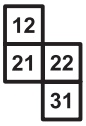
3. *Holger* fills the table alongside with the numbers 1 up to 40.

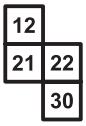
1	2	3	4	5	6	7	8
9	10	11	12				

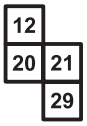
What piece could he cut out from his table after that?

A. 

B. 

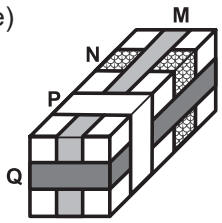
C. 

D. 

E. 

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4. *Charlotte* decorates a present with different ribbons. (see picture)

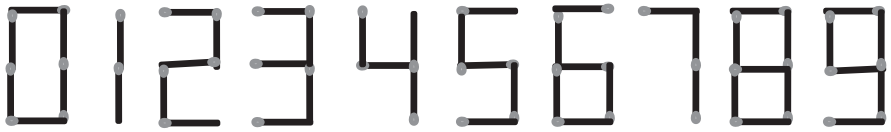


In what order did she attach the ribbons?

A. M, N, Q, P **B.** N, M, P, Q **C.** N, M, Q, P **D.** N, Q, M, P **E.** Q, N, M, P

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5. Matchsticks can be used to make numbers as shown below.



For example, for the number 15 you need 7 matchsticks.
For the number 8, you also need 7 matchsticks.

What is the largest number you can make with 7 matchsticks?

A. 31 **B.** 51 **C.** 74 **D.** 711 **E.** 800

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6. *Francesca* writes down 3 consecutive 2-digit numbers.
Instead of digits, she uses symbols.

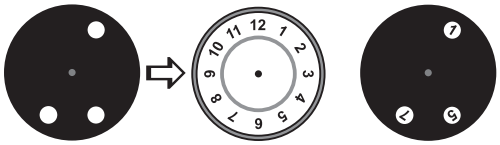


How does *Francesca* write the next number?

A.  **B.**  **C.**  **D.**  **E.** 

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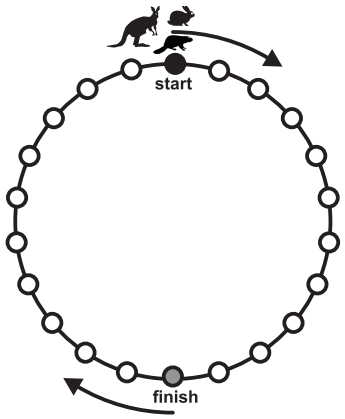
7. *Frank* has a black circle with 3 holes.
He puts this on a clock.
Ahter that the black circle is rotated.



Which numbers can you see at the same time?

A. 2, 4 and 9 **B.** 1, 5 and 10 **C.** 4, 6 and 12 **D.** 3, 6 and 9 **E.** 5, 7 and 12

8. A rabbit, a beaver and a kangaroo are competing in a race.
The beaver always jumps to the next circle.
The rabbit skips 1 circle each time.
The kangaroo skips 2 circles each time.
All 3 of them start on the black circle.

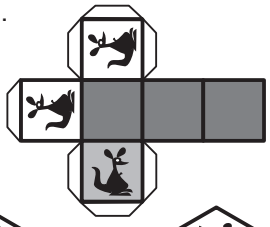


Who jumps, with the smallest number of jumps, first exactly on the grey circle?

A. the beaver **B.** the rabbit **C**. the kangaroo
D. the kangaroo and the rabbit **E.** the kangaroo and the beaver

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9. *Rosalinde* is making a cube out of a piece of paper, shown alongside.

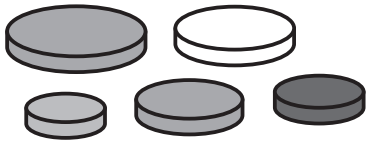


Which of the following cubes did she make?

A.  **B.**  **C.**  **D.**  **E.** 

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10. *Ann* has 5 different disks.
She wants to build towers of 4 disks.
The disks should always be placed on each other from large to small.

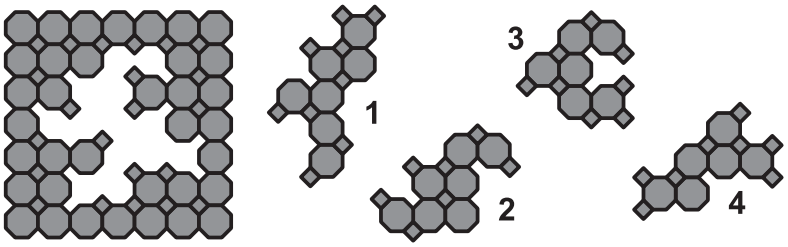


In how many different ways can *Ann* do this?

A. 3 **B.** 4 **C.** 5 **D.** 6 **E.** 7

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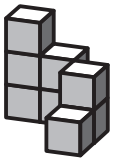
11. Which 2 pieces did *Corno* remove from the puzzle?



A. 1 and 2 **B.** 1 and 4 **C.** 2 and 3 **D.** 2 and 4 **E.** 3 and 4

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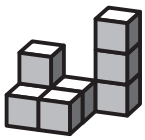
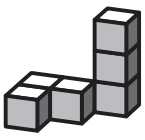
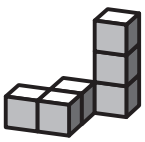
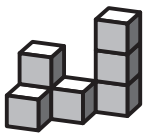
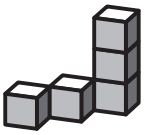
12. *Martha* has to complete the structure on the right.
In the top view, you can see how many cubes eventually should be stacked at each spot.



3	2	3
2	1	2
1	0	1

top view

Which part below does *Martha* need to complete the structure?

A.  **B.**  **C.**  **D.**  **E.** 

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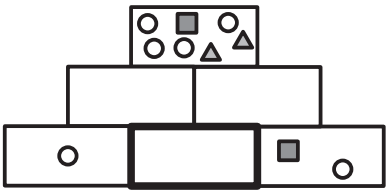
13. The numbers in the white boxes should add up to the same result as the numbers in the grey boxes.

1	3	5	2	13
7	4	6	8	11

Which 2 boxes have to switch colours?

A. 1 and 11 **B.** 2 and 8 **C.** 3 and 7 **D.** 3 and 13 **E.** 7 and 13

14. On the right you see a pyramid of rectangles.
Each rectangle must contain the same symbols as in the 2 rectangles directly below it together.

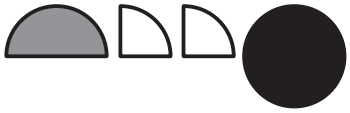


Which symbols should be in the middle rectangle of the bottom row?

A.  **B.**  **C.**  **D.**  **E.** 

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15. *Jonte* has a black circle and 3 pieces of paper.
He glues the 3 pieces onto the circle one by one.

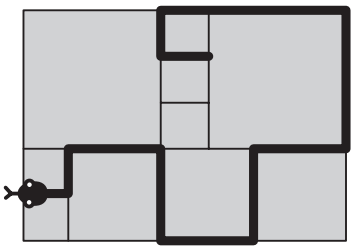


Which result can he **not** obtain?

A.  **B.**  **C.**  **D.**  **E.** 

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16. In the picture, you see a terrace with square tiles.
There are 3 different sizes.
The small tile has a perimeter of 80 cm.
On the terrace *Jelte* draws a snake.

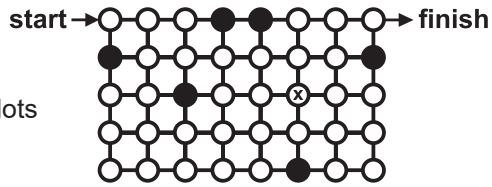


How long is this snake?

A. 380 cm **B.** 400 cm **C.** 420 cm **D.** 440 cm **E.** 1680 cm

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17. *Sarah* begins at the start point and is looking for a route to the finish point.
She has to pass through all the white dots.
She may only move horizontally and vertically across the white dots and she may pass through each white dot only once.

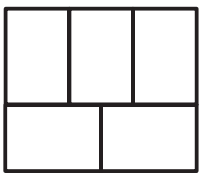


When *Sarah* arrives at the dot with X, in which direction does she move next?

A.  **B.**  **C.**  **D.**  **E.** There is no route.

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18. In the picture on the right, you see 5 rectangles.
Luke colors the rectangles blue, red or yellow.
Rectangles touching each other should not have the same color.



In how many different ways can *Lucas* do this?

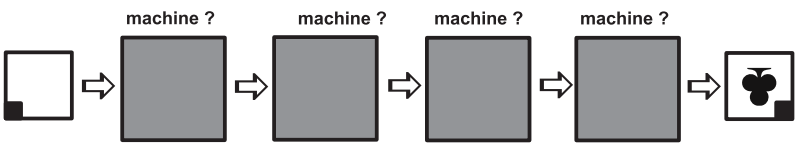
A. 3 **B.** 4 **C.** 5 **D.** 6 **E.** 7

---

19. *Els* has 2 machines.
Machine R turns the paper a quarter turn clockwise.
Machine S puts a stamp on the paper.



In what order should *Els* use the machines to get this end result?



A. RRRS **B.** RSRR **C.** SRRR **D.** SRRS **E.** SRSR

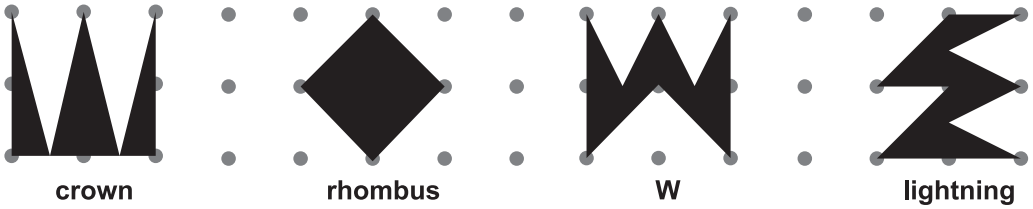
20. *Robert* and *Sonja* are playing a game.
Taking turns, they must take 1, 2, 3, 4 or 5 cards from the deck.
Whoever takes the last card has lost the game.
At one point there is a pile of 10 cards left. It is *Robert*'s turn.

How many cards should he leave to make sure he wins the game?

A. 5 **B.** 6 **C.** 7 **D.** 8 **E.** 9

---

21. Which figure has the greatest area?



A. crown **B.** rhombus **C.** W **D.** lightning
E. All the figures have the same area.

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22. *Martin* has 3 cards.
There are numbers on both sides of the cards.
Martin places the 3 cards face up at random on the table and adds up the 3 numbers he sees.

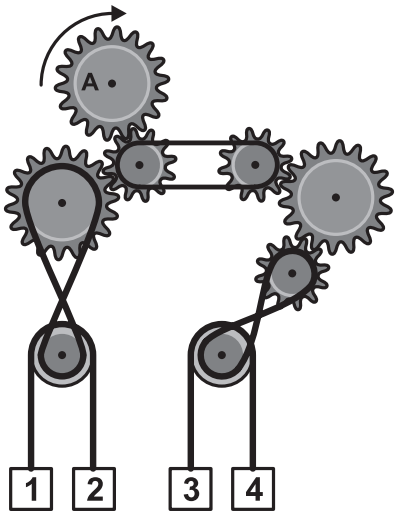
How many different results can *Martin* get?

	front	back
card 1	1	4
card 2	2	5
card 3	3	6

A. 3 **B.** 4 **C.** 5 **D.** 6 **E.** 10

---

23. Gear A is turned clockwise.



Which boxes will go up?

A. 1 and 3 **B.** 1 and 4 **C**. 2 and 3 **D.** 2 and 4 **E.** You can not know this.

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24. *Maria, Peter, Richard* and *Tina* are playing soccer in the schoolyard.
A soccer ball hits the window and the window breaks.
The principal is trying to figure out who did it.
He gets the following answers.
Maria says: It was *Peter*.
Peter says: It was *Richard*.
Richard says: It wasn't me.
Tina says: It wasn't me.
One of the 4 children tells the truth.

Who kicked the ball against the window?

A. *Maria* **B.** *Peter* **C.** *Richard* **D.** *Tina* **E.** You can not know this.