

WereldWijde WiskundeWedstrijd  
**W4Kangoeroe**

**THURSDAY**  
**MARCH 18<sup>TH</sup> 2021**

**WWW.W4KANGOEROE.NL**

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 29<sup>th</sup>

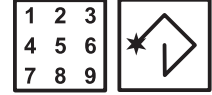


solutions will be posted on the website about April 20<sup>th</sup>

1. Which of the following constructions can be made with these 6 blocks?



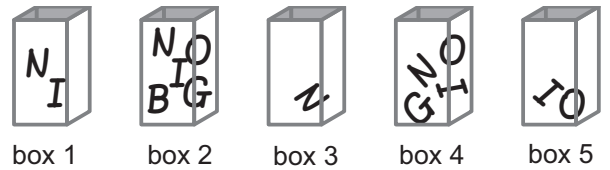
2. In the square you see the digits from 1 to 9. A number is created by starting at the star, following the line and writing down the digits along the line while passing. For example the line shown represents the number 42685.



Which of the following lines represents the greatest number?



3. Sofie wants to make the word BINGO. She can only take 1 letter from each box.



What letter must she take from box 4?

- A. B      B. I      C. N      D. G      E. O

4. The 5 puzzle pieces together form a rectangle with a calculation on it.



What is the result of this calculation?

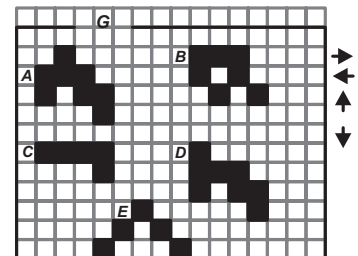
- A. 14      B. 22      C. 32      D. 41      E. 203

5. In how many places are 2 children holding each other with their left hand?



- A. 1      B. 2      C. 3      D. 4      E. 5

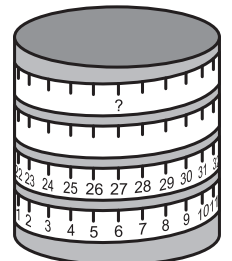
6. In the grid you see 5 figures. These figures can move in the direction of the arrows.



Which figure can leave the rectangle through gate G?

- A. A      B. B      C. C      D. D      E. E

7. A measuring tape is wound around a cylinder.

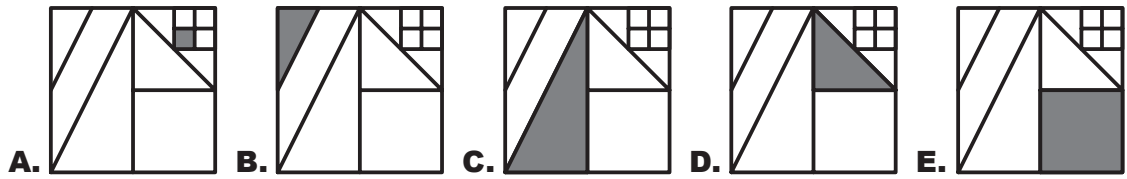


What is the number at the question mark?

- A. 53      B. 60      C. 69      D. 77      E. 81

8. Lines are drawn in the squares below.  
Each line starts either in a vertex or in the middle of one side of one of the squares.

In which square is  $\frac{1}{8}$  part grey coloured?

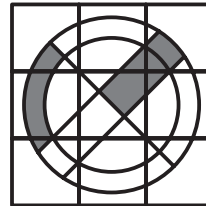


9. *Julian* writes the number 5021972970 on a sheet of paper.  
Then he cuts the sheet twice, now he has 3 numbers. *Julian* adds these 3 numbers.

What is the smallest sum *Julian* can get?

- A. 3244      B. 3444      C. 5172      D. 5217      E. 5444

10. On the right you see a puzzle of 9 pieces.



Which piece is **not** part of the puzzle?

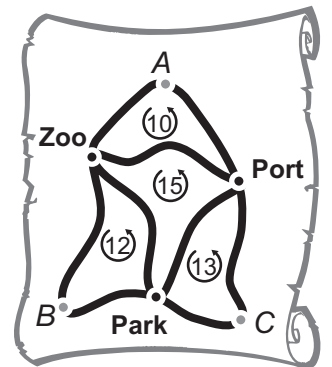


11. *Manouk* has a 4-digit bike lock with the digits from 0 to 9.  
After opening, she turns all numbers in the same direction equally far.

Which code **cannot** be the right code of her bike lock?



12. In the map points *A*, *B* and *C* are bus stations.  
The tour *A - Zoo - Port - A* is 10 km.  
The tour *B - Park - Zoo - B* is 12 km.  
The tour *C - Port - Park - C* is 13 km.  
The tour *Zoo - Park - Port - Zoo* is 15 km.



How many km is the tour *A - B - C - A*?

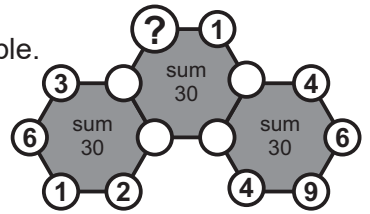
- A. 20 km      B. 25 km      C. 27 km      D. 35 km      E. 50 km

13. *Ronja* has 4 white stones, *Wanja* has 4 black stones.  
Taking turns they are stacking their stones and creating 2 piles.  
*Ronja* starts.

Which pair of piles could **not** be a result of their play?



14. On the right you see 3 hexagons. At every vertex a number is written, but some numbers are invisible. If you add the numbers of each hexagon, you get 30 as a result.



What is the number on the vertex with a question mark?

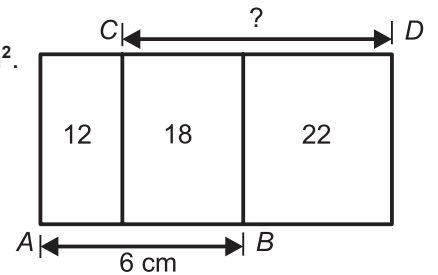
- A. 3                      B. 4                      C. 5                      D. 6                      E. 7

15. There are 20 apples and 20 pears in a box. Carl randomly takes 20 pieces of fruit from the box, Luca takes the remaining 20 pieces of fruit.

Which statement is surely true?

- A. Carl got at least 1 pear                      B. Carl got as many apples as pears  
 C. Carl got as many apples as Luca                      D. Carl got as many apples as Luca got pears  
 E. Carl got as many pears as Luca

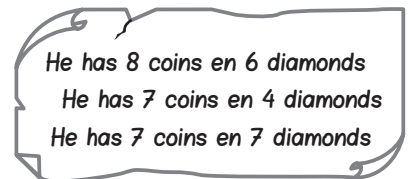
16. On the right you see 3 rectangles with the same height. The numbers within the rectangles indicate their areas in  $\text{cm}^2$ . The length of  $AB = 6$  cm.



What is the length of  $CD$ ?

- A. 7 cm                      B. 7.5 cm                      C. 8 cm                      D. 8.2 cm                      E. 8.5 cm

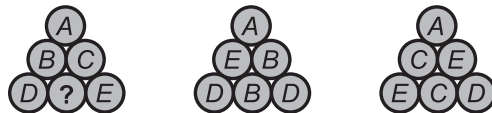
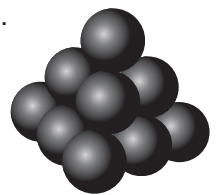
17. 3 pirates are asked how many coins and how many diamonds their friend *Graybeard* has. Each of them answered the truth about one of the questions and lied about the other. Their answers are written on the piece of paper pictured.



What is the total amount of coins and diamonds *Graybeard* has?

- A. 11                      B. 12                      C. 13                      D. 14                      E. 15

18. Job builds a construction of 10 balls of the same size, as shown in the picture. There will be 6 at the bottom, 3 in the middle and the last one on top. Each ball has 1 of the letters A, B, C, D or E on it. There are 2 balls for each letter. The picture shows 3 side views of the construction.



What is the letter on the ball with the question mark?

- A. A                      B. B                      C. C                      D. D                      E. E

19. Maryam has books of 3 different sizes: small, medium and large. She wants to arrange her books on the shelf from large to small. In each move she is allowed to change 2 books.



What is the smallest number of moves she will need to arrange her books?

- A. 2                      B. 3                      C. 4                      D. 5                      E. 6

- 20.** There is a single train track between points X and Y.  
A company wants one train to leave from X and one train to leave from Y at the same time daily. It takes 180 minutes for a train to make a trip from X to Y and 60 minutes from Y to X. Both trains move with constant speed.



Where should the company build a double track to avoid a crash?

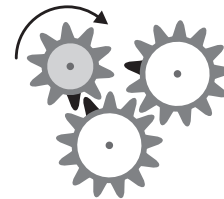
- A.** **B.** **C.** **D.** **E.**

- 21.** Anne, Bob, Corina, Daan and Edwin are sitting at a round table.  
Anne is not sitting next to Bob.  
Daan is sitting next to Edwin.  
Bob is not sitting next to Daan.

Who are sitting next to Corina?

- A.** Anne and Bob                      **B.** Bob and Daan                      **C.** Daan and Edwin  
**D.** Edwin and Anne                      **E.** you can not know

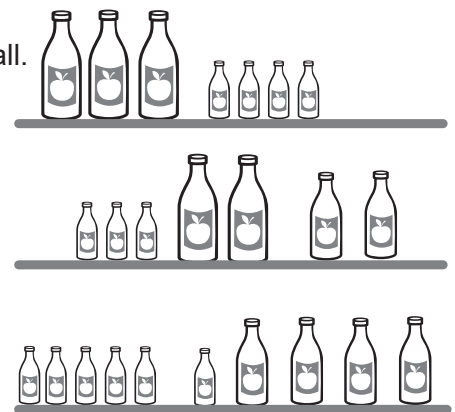
- 22.** On the right you see 3 gears.  
Each gear has 1 black tooth.  
The smallest gear is turned 1 full turn clockwise.



Which picture shows the right positions of the black teeth?

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

- 23.** Each shelf holds a total of 64 dl of apple juice.  
The bottles have 3 different sizes: large, medium and small.



How many dl of apple juice does a medium size bottle contain?

- A.** 3                      **B.** 6                      **C.** 8                      **D.** 10                      **E.** 14

- 24.** Lianne has drawn a red cross from vertex to vertex on all sides of a large cube with sides of 7 cm. She now cuts this cube into small cubes with sides of 1 cm.

How many of these small cubes have at least 1 piece of a red line drawn on it?

- A.** 54                      **B.** 62                      **C.** 70                      **D.** 78                      **E.** 86