

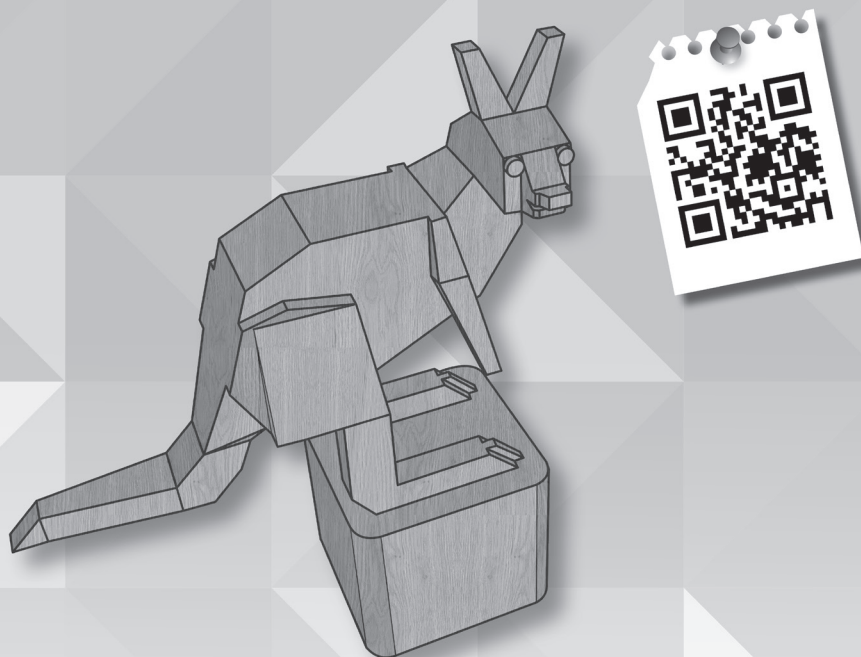
WereldWijde WiskundeWedstrijd

W4Kangoeroe

COMPETITION PERIOD

MARCH 19 TO 27

WWW.W4KANGOEROE.NL



**GOOD LUCK AND MOST OF
ALL HAVE FUN !**

© Stichting Wiskunde Kangoeroe



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
April 4th



solutions will be
posted on the website
about April 20th

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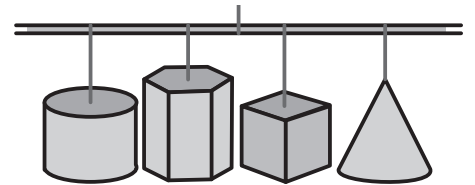


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**rijksmuseum
boerhaave**

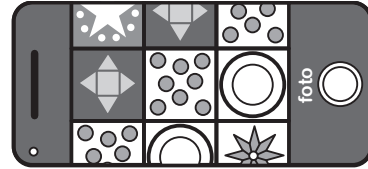
1. There are a number of solid figures hanging in the classroom.
Betty looks at these figures from below.



What does Betty see?

- A. B. C.
D. E.

2. A tiled floor has been laid in a fixed pattern.
Eva takes a picture of the floor with her phone.



What is the pattern from left to right?

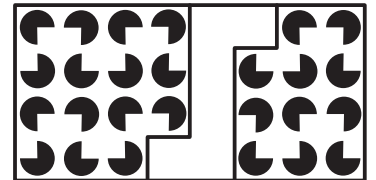
- A. B. C.
D. E.

3. Luna has a bracelet with 3 types of beads.
There are 2 round beads next to each other.
There are no 2 square beads next to each other.

Which bracelet belongs to Luna?

- A. B. C. D. E.

4. Which puzzle piece completes this puzzle so that the pattern is correct?



- A. B. C. D. E.

5. Anthea places a number of these shapes on top of each other to make this figure:
The pieces may overlap.



What is the smallest number of pieces she needs to make the figure?

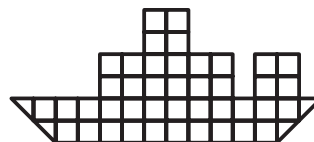
- A. 2 B. 3 C. 4 D. 5 E. 6

6. A pizza is cut into 8 equal slices.
Max eats a quarter of the pizza.
Grace eats half of what is left.

How many slices of pizza remain?

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

7. Seppe has pieces of paper in these 2 shapes.

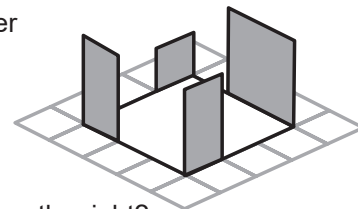


He wants to create a boat shown here.
The pieces must not overlap.

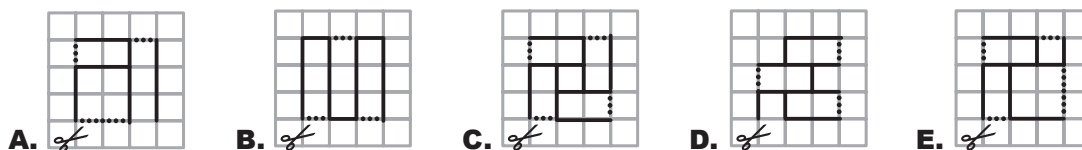
What is the smallest number of pieces of paper he needs?

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

8. Jasper cuts along the thick lines in the drawings below and folds the paper upwards along the dashed lines



Which of the templates below did he use to create the figure shown here on the right?



9. Daria places a mirror on the dashed line.



What does she see in the mirror?



10. A dice has 6 sides with the numbers 1 to 6.
The numbers opposite each other always add up to 7.
Bram sees exactly 3 sides of the dice.
The numbers he sees add up to 14.

Which 3 numbers does he **not** see?

- A. 1, 2 and 4 B. 3, 5 and 6 C. 2, 5 and 6 D. 1, 2 and 6 E. 2, 3 and 4

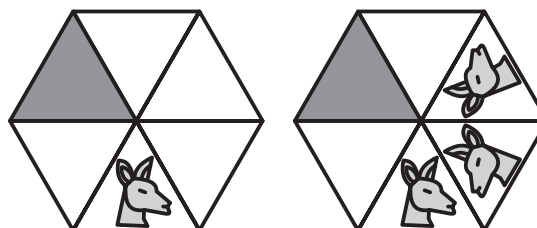
11. Each circle must contain a number so that the calculations are correct.

$$\begin{array}{rcl} \text{Grey Circle} & + & \text{White Circle} = 10 \\ + & & + \\ \text{White Circle} & - & \text{Grey Circle} = 4 \\ \hline 16 & & 10 \end{array}$$

What is the result when you add up the numbers in the grey circles?

- A. 10 B. 12 C. 23 D. 16 E. 14

12. The first figure shows a picture of a kangaroo.
James mirrors the kangaroo twice (see the second figure).



If he continues mirroring, what will the kangaroo look like in the grey triangle?

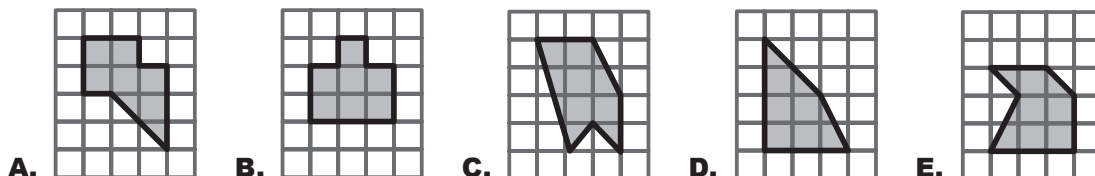


- 13.** A detective is trying to determine the route the suspect took. During the interrogation, the suspect gives 3 different answers. In each answer, exactly one of the cities is correct and is also in the right place in the sequence.
- 'I went from New York via Chicago to Omaha.'
- 'I went from New York via Miami to Kansas City.'
- 'I went from San Francisco via Miami to Omaha.'

Which route did the suspect take?

- A.** New York ▶ Chicago ▶ Omaha
- B.** San Francisco ▶ Chicago ▶ Kansas City
- C.** New York ▶ Miami ▶ Kansas City
- D.** San Francisco ▶ Miami ▶ Omaha
- E.** Chicago ▶ San Francisco ▶ Kansas City

- 14.** Which shape below has an area that none of the other shapes have?



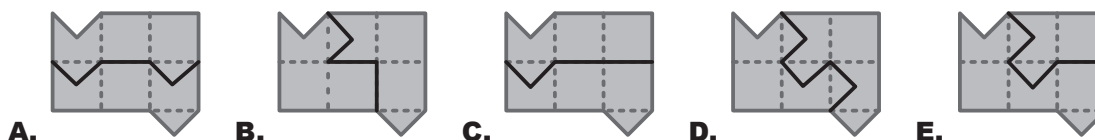
- 15.** 30 children from a school are going to see caves in Kangaroo Land from a cart. Each cart can hold 3 children. A full cart leaves every 2 minutes and a ride takes 10 minutes. The first cart leaves at 13:00 hours.

What time will the last cart arrive?

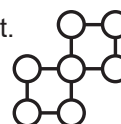
- A.** 13:18
- B.** 13:20
- C.** 13:28
- D.** 13:30
- E.** 14:40

- 16.** Each of the figures below is cut into 2 pieces along the black line.

Which figure produces 2 identical figures that can be placed exactly on top of each other?



- 17.** Peter writes the numbers 0, 1, 2, 3, 4, 5, 6 in the circles on the right. When he adds up the numbers in each row from left to right, each row gives the same result.



What result does he get when he multiplies the numbers in the middle row from left to right?

- A.** 0
- B.** 12
- C.** 15
- D.** 18
- E.** 24

- 18.** Frits removes several numbers from the table on the right. When he adds up the remaining numbers in each row from left to right and in each column from top to bottom, he always gets 15 as the result. Now he adds up the numbers he has removed.

4	7	7	4
6	4	4	5
5	5	4	6
5	8	7	4

What is the result of this?

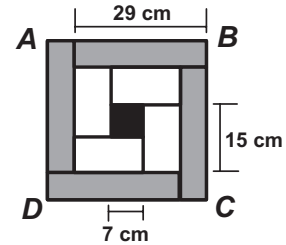
- A.** 24
- B.** 25
- C.** 27
- D.** 29
- E.** 31

- 19.** Flo has a combination lock with 4 digits from 0 to 9. He has forgotten the correct combination, but he remembers that all the digits are odd and different. He also remembers that they are in order from left to right, either from smallest to largest or from largest to smallest.

How many different combinations are possible?

- A.** 6
- B.** 8
- C.** 10
- D.** 12
- E.** 14

20. The square $ABCD$ is divided into 4 grey rectangles, 4 white rectangles and 1 black square. The side length of the black square is 7 cm. The longest side of a white rectangle measures 15 cm. The longest side of a grey rectangle measures 29 cm.

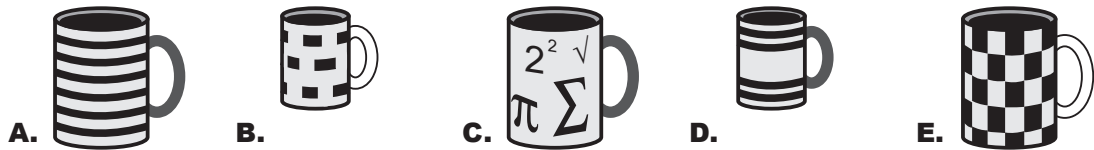


What is the side length of square $ABCD$?

- A. 33 cm B. 34 cm C. 35 cm D. 36 cm E. 37 cm

21. The mugs below belong to *Leonard*, *Rajesh*, *Amy*, *Penny* and *Sheldon*. All mugs have either a black or white handle. *Leonard* and *Rajesh*'s mugs are the same size, but the handles are different colours. *Amy* and *Penny*'s mugs are not the same size, but they have handles of the same colour.

Which mug belongs to *Sheldon*?



22. *Ira* has a strip of paper with the numbers 1 to 16 as shown below.

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

She folds the strip in half, as shown below.

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

She repeats this until there are only 2 cells left.

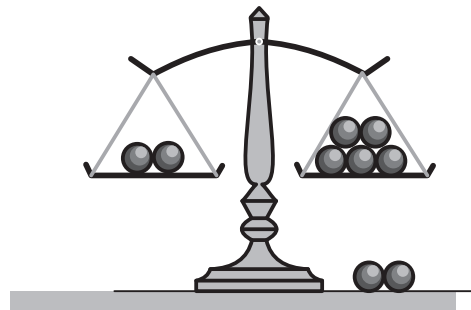
1	2
---	---

Now she pokes a hole in the cell with the number 1 with a needle, then unfolds the strip again. She adds up the numbers in all the cells with holes in them.

What is the result she gets?

- A. 64 B. 68 C. 99 D. 128 E. 136

23. *Julia* has 9 balls, each having a different weight from 1 to 9 kg. She places 7 balls on the scales as shown in the picture so that the scales are balanced.



What is the minimum possible total weight of the 2 balls that are not used?

- A. 5 kg B. 7 kg C. 9 kg D. 11 kg E. 17 kg

24. Kangaroo writes all the numbers from 1 to 7000 in a row from smallest to largest, without spaces or commas between the numbers.

How many times does 2026 appear in this row?

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