

wereldwijde  
wiskundewedstrijd  
**W4Kangoeroe**

[www.w4kangoeroe.nl](http://www.w4kangoeroe.nl)

March 19th  
2015

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 in May



answers will be posted  
on the website March  
26th

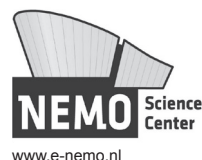


solutions will be  
posted on the website  
April 19th

wizSMART

7 & 8 primary school and 1 & 2 vmbo,  
vmbo 3 & 4 basisberoepsgerichte leerweg

zwijzen



[www.e-nemo.nl](http://www.e-nemo.nl)



[www.education.ti.com](http://www.education.ti.com)



[www.smart.be](http://www.smart.be)



[www.sanderspuzzelboeken.nl](http://www.sanderspuzzelboeken.nl)



[www.schoolsupport.nl](http://www.schoolsupport.nl)



[www.blinkuitgevers.nl](http://www.blinkuitgevers.nl)



[www.idpremiums.nl](http://www.idpremiums.nl)



[www.ru.nl](http://www.ru.nl)



[www.platformwiskunde.nl](http://www.platformwiskunde.nl)



[www.rekontuin.nl](http://www.rekontuin.nl)



[www.denksport.nl](http://www.denksport.nl)

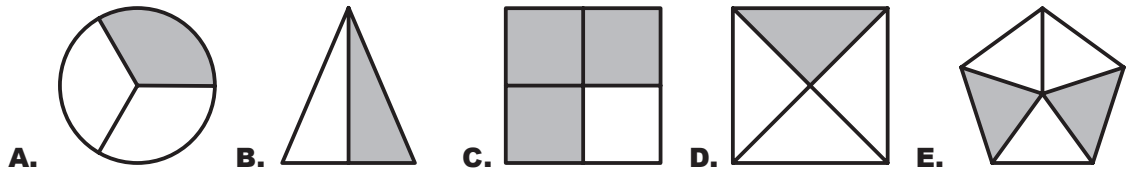


[www.cito.nl](http://www.cito.nl)

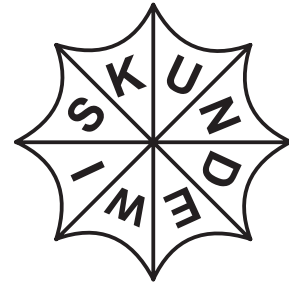


[www.museumboerhaave.nl](http://www.museumboerhaave.nl)

1. Which of the following figures is 50% grey?



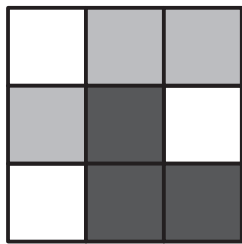
2. Eric's umbrella has WISKUNDE written on top. (see picture)



Which one cannot be Eric's umbrella?



3. Noah coloured the 9 little squares in the figure white, black or grey.



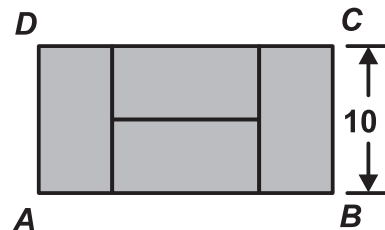
What is the least number of little squares that Noah has to colour again so that no 2 squares with a common side have the same colour?

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

4. Which of the following fractions is smaller than 2?

- A.  $\frac{19}{8}$                       B.  $\frac{20}{9}$                       C.  $\frac{21}{10}$                       D.  $\frac{22}{11}$                       E.  $\frac{23}{12}$

5. Rectangle ABCD consists of 4 identical rectangles. Side BC is 10 cm



What is the length of side AB?

- A. 15 cm                      B. 20 cm                      C. 25 cm                      D. 30 cm                      E. 40 cm

6. A plant has 2 kinds of stems.



One kind with 5 leaves, and one kind with 2 leaves and 1 flower.

In total the plant has 6 flowers and 32 leaves.

How many stems does this plant have?

- A. 10                      B. 12                      C. 13                      D. 15                      E. 16

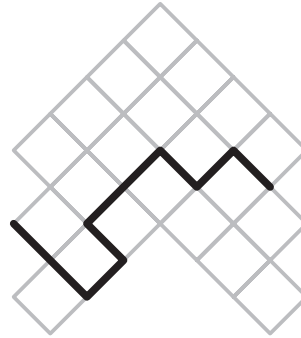
7. There are 10 ducks, 5 ducks each lay 1 egg a day each. The other 5 ducks each lay 1 egg every other day, so, one day they do and the other day they do not.



How many eggs do the 10 ducks lay within a period of 10 days?

- A. 10                      B. 25                      C. 50                      D. 60                      E. 75

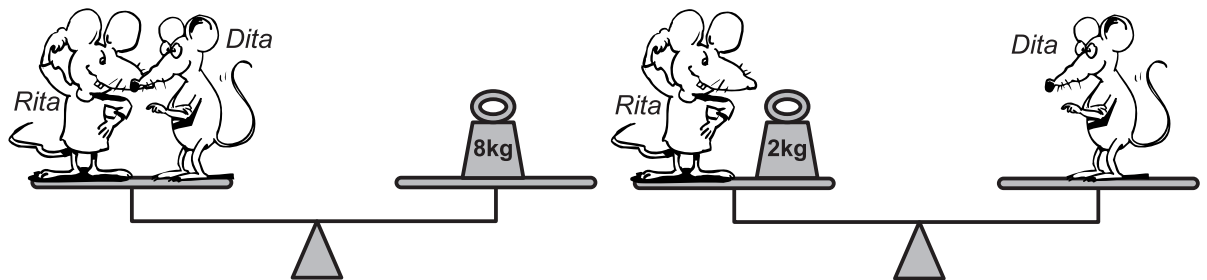
8. The following figure consists of little squares with an area of 4 cm<sup>2</sup>.



What is the length of the thick black line?

- A. 7 cm                      B. 9 cm                      C. 14 cm                      D. 18 cm                      E. 36 cm

- 9.



How much does Rita weigh?

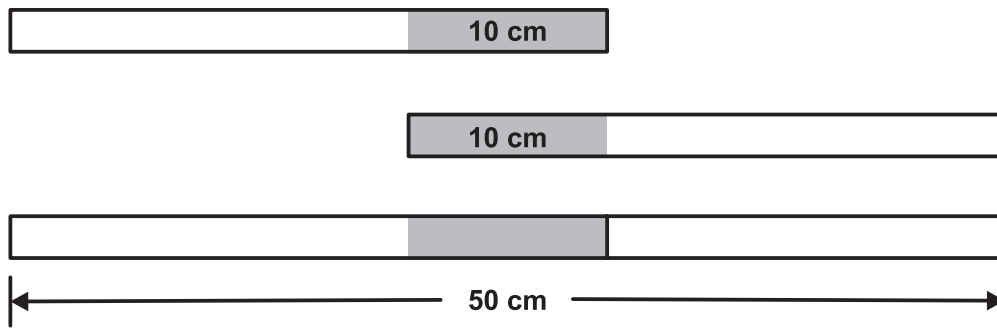
- A. 2 kg                      B. 3 kg                      C. 4 kg                      D. 5 kg                      E. 6 kg

10. The area of a rectangle is 12 cm<sup>2</sup>. The length and width are whole numbers.

Which of the following numbers can be the perimeter of this rectangle?

- A. 20 cm                      B. 26 cm                      C. 28 cm                      D. 32 cm                      E. 48 cm

11. Ceylin has 4 paper strips of the same length. She glues two strips together so that the 2 strips have an overlap of 10 cm. She will get a strip of paper of 50 cm length. (see picture)

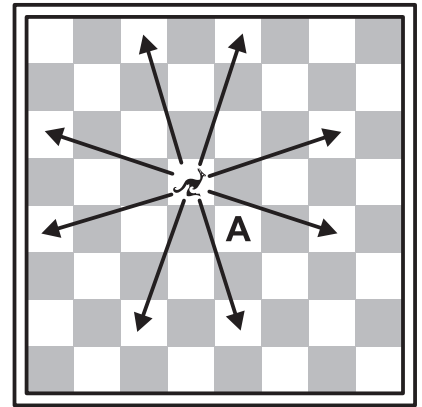


She wants to glue the other 2 strips together in such a way that she will get a strip of 56 cm.

How many cm do these 2 strips overlap in this case?

- A. 4                      B. 6                      C. 7                      D. 8                      E. 12

12. A new chess piece has been introduced: the “Kangaroo”



With each move the Kangaroo jumps either 3 squares horizontally and 1 vertically or 1 square horizontally and 3 squares vertically.

What is the least number of moves the Kangaroo needs to get from the square where it is now, to the square marked **A**.

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

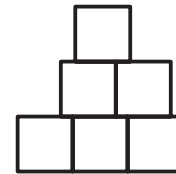
13. *Finn* multiplies the number 100 by 2 or by 3. Then he adds 1 or 2 to the outcome. Finally he divides the outcome of that by 3 or 4. *Finn* gets a whole number now.

# 100

Which number?

- A.** 50                      **B.** 51                      **C.** 67                      **D.** 68  
**E.** Several numbers are possible.

14. The figure alongside consists of 6 little squares of side 1 cm.



What is the perimeter of the figure?

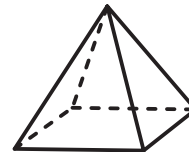
- A.** 9 cm                      **B.** 10 cm                      **C.** 11 cm                      **D.** 12 cm                      **E.** 13 cm

15. Each day of the year, *Zoë* adds up the four digits the date consists of, and writes down the result. Thus, she writes the number 13 on 19 March (19-03), because  $1 + 9 + 0 + 3 = 13$ .

What is the largest number *Zoë* writes down then?

- A.** 14                      **B.** 16                      **C.** 20                      **D.** 23                      **E.** 43

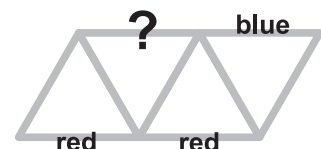
16. Alongside you see a figure of a pyramid.



Which of the following nets cannot be folded into a pyramid?

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

17. Each of the 9 sides of the figure alongside has to be coloured blue, green or red. The sides of each triangle have to be of different colours. Three sides are already coloured.



What colour(s) can the side with the question mark be?

- A.** only blue                      **B.** only green  
**C.** only red                      **D.** both blue and red                      **E.** both green and red

- 18.** On Church Street there are 9 houses in a row next to each other.  
In each house lives at least 1 person.  
In every pair of houses next to each other live at most 6 people.

What is the maximum number of people that can live on Church Street?

- A.** 23                      **B.** 25                      **C.** 27                      **D.** 29                      **E.** 31

- 19.** *Mila* and her mother were both born in January.

Today, 19 March 2015, *Mila* adds her year of birth,  
her mother's year of birth, her age and her mother's age.



Which outcome does she get?

- A.** 4027                      **B.** 4028                      **C.** 4029                      **D.** 4030                      **E.** 4031

- 20.** In a bag are 3 black left socks, 5 red left socks, 7 black right socks and 2 red right socks.  
*Sem* takes socks out of the bag all the time one by one.

What is the least number of socks *Sem* has to take out to make sure that there are a left sock and a right sock of the same colour among them?

- A.** 9                          **B.** 10                          **C.** 11                          **D.** 12                          **E.** 13

- 21.** A train has 12 wagons. Each wagon has the same number of rows of chairs.  
*Sophie* is in the 3<sup>rd</sup> wagon and in the 18<sup>th</sup> row, counting from the locomotive.  
*Levi* is in the 7<sup>th</sup> wagon and in the 50<sup>th</sup> row, counting from the locomotive.



How many rows are there in each wagon?

- A.** 7                          **B.** 8                          **C.** 9                          **D.** 10                          **E.** 12

- 22.** *Eman* has bought 3 toys.

For the first toy she paid half of her money plus € 1.

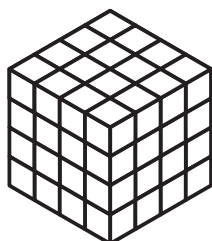
For the second toy she paid half of the remaining of her money plus € 2.

Finally she paid for the third toy half of the remaining of her money again plus € 3,  
after which her money was finished.

How much money did *Eman* had in the beginning?

- A.** € 28                      **B.** € 30                      **C.** € 32                      **D.** € 34                      **E.** € 36

- 23.** *Tess* uses little cubes with 1 cm sides to build a large cube with sides of 4 cm.



Then she colours 3 faces of the large cube red and the other 3 faces blue.  
When she has finished there is no little cube having 3 red faces.

How many little cubes have both a red and a blue face?

- A.** 0                          **B.** 8                          **C.** 12                          **D.** 24                          **E.** 32

- 24.** 4 points are on a line.

In ascending order the distances between those points are 2, 3, *k*, 11, 12 en 14.

Which number is *k*?

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