

wereldwijde
wiskundewedstrijd
W4Kangoeroe

www.w4kangoeroe.nl

March 21st 2013



**Good luck and most of
all have fun.**

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calculators are not
allowed



you may use
50 minutes



scribbling paper is
allowed



results and prizes will
arrive at school in May



answers will be posted
on the website March
28th



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.zwijzen.nl



www.e-nemo.nl

TEXAS
INSTRUMENTS
www.education.ti.com



www.smart.be



www.rekenzeker.nl



www.sanderspuzzelboeken.nl



www.schoolsupport.nl

ID Premiums
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www.ru.nl

platform
wiskunde nederland
www.platformwiskunde.nl



www.zozitdat.nl

Denksport

www.denksport.nl



www.cito.nl



www.museumboerhaave.nl

1. How many small cubes does figure A have more than figure B?

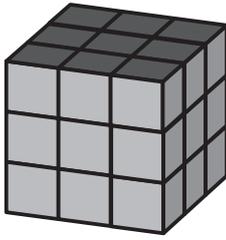


figure A

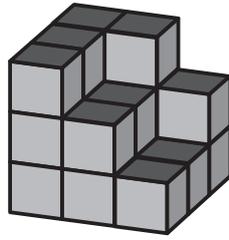
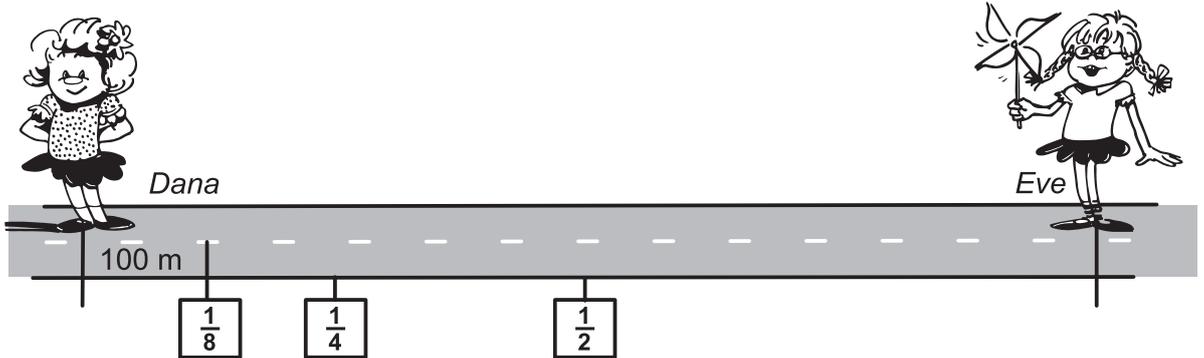


figure B

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

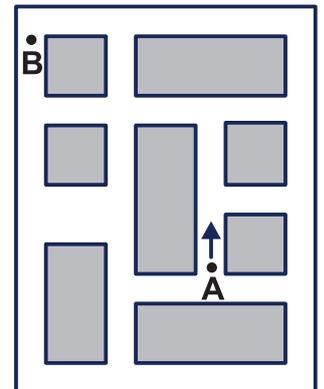
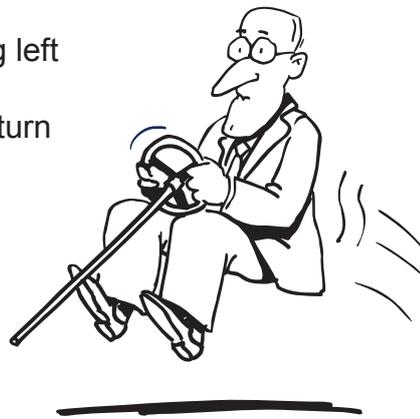
2.



How many meters do *Dana* and *Eve* stand from each other?

- A. 300** **B. 400** **C. 700** **D. 800** **E. 1000**

3. *Fred's* car is not steering well: turning right is fine, but turning left is impossible. How often does *Fred* have to turn right to go from A to B?



- A. 3** **B. 4** **C. 6** **D. 8** **E. 10**

4. Altogether, *Fred*, *Charles* and *Dana* are 31 years old. How old will they be altogether 3 years from now?

- A. 32** **B. 34** **C. 35** **D. 37** **E. 40**

5. The three squares should contain the same digit: $\square\square \times \square = 176$. Which digit?

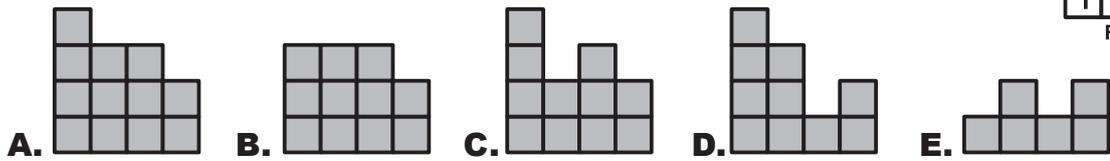
- A. 4** **B. 6** **C. 7** **D. 8** **E. 9**

6. *Eve* has to take a pill every quarter of an hour. Her first pill she took at 11.05 am. At what time will she take her fourth pill?

- A. 11.40 am** **B. 11.50 am** **C. 11.55 am** **D. 12.00 pm** **E. 12.05 pm**

7. *Dana* has made a construction out of cubes. Alongside you can see the construction from above. Every square shows the number of cubes that are on top of each other. What will *Dana* see when she looks to the construction from the front?

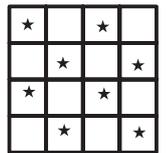
BACK			
4	2	3	2
3	3	1	2
2	1	3	1
1	2	1	2
FRONT			



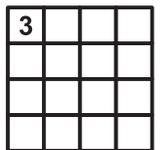
8. You can divide the number 32 by its last digit: $32 : 2 = 16$. You cannot divide 38 by its last digit: $38 : 8$ is not possible. How many numbers from 21 up to 29 can be divided by their last digit?

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

9. The following figures will be put on top of the square alongside, one by one. Which figure can cover the largest number of little stars?

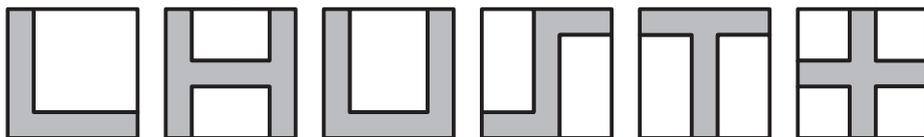


10. Digits will be placed in the small squares of the square shown alongside. The digits in squares next to or below each other should differ by 1. The digit 3 will be put in the upper left hand square; the digit 9 will also appear somewhere in the square. How many different digits will there be in the square?



A. 4 B. 5 C. 6 D. 7 E. 8

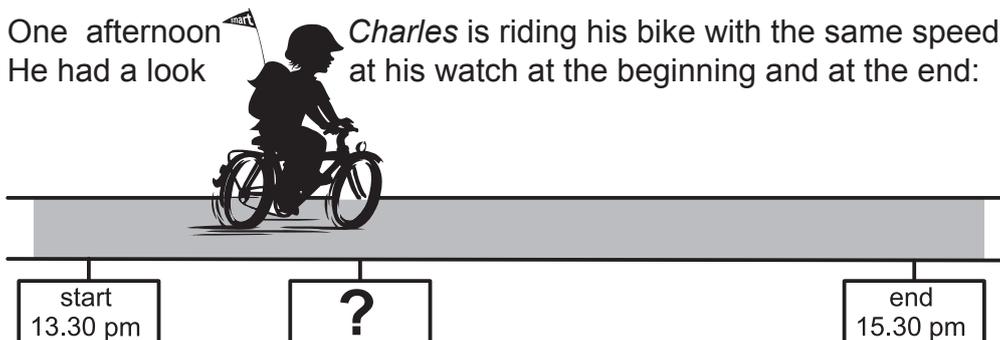
11. *Eve* has drawn grey figures on square sheets of paper.



Some of these figures have the same perimeter as the whole sheet. How many figures?

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

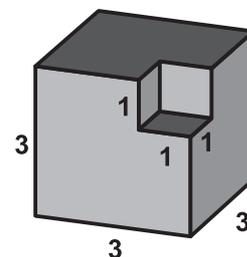
12. One afternoon *Charles* is riding his bike with the same speed all the time. He had a look at his watch at the beginning and at the end:



What is the time when he has done one third of the whole ride?

A. 13:40 pm B. 13:50 pm C. 14:00 pm D. 14:10 pm E. 14:20 pm

- 13.** From a cube with edges of 3 cm, we cut a small cube with edges of 1 cm, as shown in the picture alongside. We do this at each corner. How many faces will the figure have that we end up with?

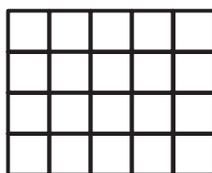


A. 16 **B.** 18 **C.** 24 **D.** 30 **E.** 36

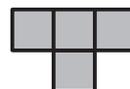
- 14.** In a game of field hockey between PUSH and FLATS 6 goals were scored in the first half. FLATS was leading by half time. After the break, PUSH scored 3 more goals and won the game. How many goals did PUSH score during the whole game?

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

- 15.** Dana has a piece of paper:



She cuts out of it as many of these figures as possible:



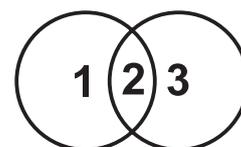
How many of these figures will she get?

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

- 16.** The PUSSYCAT 2013 title is contested by 66 cats. After the first round 21 cats dropped out: they could not catch mice. Of the remaining cats, 27 are striped and 32 have a black ear. All striped cats with black ears went on to the final round. How many cats will at least go to the final?

A. 14 **B.** 18 **C.** 27 **D.** 39 **E.** 45

- 17.** Using two equal circles you can make three regions. Now *Charles* would like to make as many regions as possible using two equal squares. What is the largest number of regions he can make?



A. 3 **B.** 5 **C.** 6 **D.** 8 **E.** 9

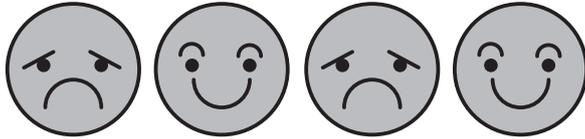
- 18.** *Fred* caught a number of fish. If he had caught three times as many fish, he would have caught 12 more fish. How many fish did *Fred* catch?

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

- 19.** In an election, each of the five candidates got a different number of votes. There were 36 votes cast. The winner got 12 votes. The candidate who finished last, got 4 votes. How many votes could the candidate that ended in second place, have gotten?

A. only 8 is possible **B.** 8 and 9 are both possible **C.** only 9 is possible
D. 9 and 10 are both possible **E.** only 10 is possible

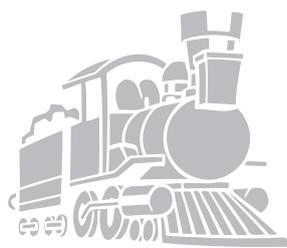
20. Four buttons are aligned in a row, as in the figure below.



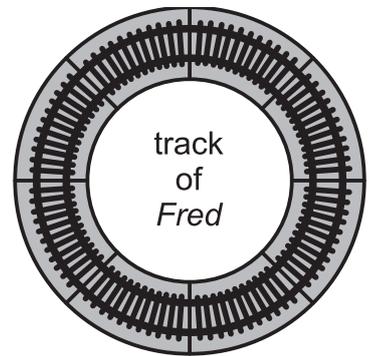
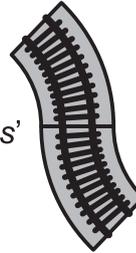
When you press a button, the face of that button changes, as do those of the faces immediately next to it: a happy face turns sad and a sad face becomes happy. You would like to get all faces happy. How often do you have to press for that?

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

21. Fred and Charles have found some old pieces of railroad track. Fred builds a circle out of eight equal pieces. Charles starts putting down two pieces, as shown in the picture. Now Charles would like to build a closed track with the smallest possible number of pieces. How many pieces will Charles need for his track in total?



Charles' start



- A. 11 B. 12 C. 14 D. 15 E. 16

22. Fred makes four equal cubes out of nets as in figure 1. He glues the cubes together as in figure 2. Only faces with the same digits will be glued together. After that, Fred adds up the 16 digits that are still visible. What is the largest possible outcome he could get?

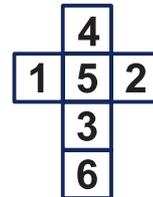


figure 1

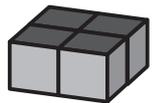


figure 2

- A. 60 B. 64 C. 66 D. 68 E. 70

23. 2013 people live on an island. Some are knights, they always speak the truth. The others always lie. Every day one of the people says: "When I have left, the number of knights will equal the number of liars." After that he leaves the island. After 2013 days the island is uninhabited. How many liars were there at the beginning?

- A. 0 B. 1006 C. 1007 D. 2012 E. 2013

24. When you add to the number 104 the number 297, you get 401. So the number 104 is turned around this way. How many numbers of three digits will be turned around when you add 297 to it?

- A. 6 B. 7 C. 10 D. 50 E. 60