wizSMART 2020

WereldWijde WiskundeWedstrijd

W4Kangoeroe

Thursday
March 19th 2020

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 29th

solutions will be posted on the website about April 20th

wizSMART
7 & 8 primary school

1. Which tile completes the picture?
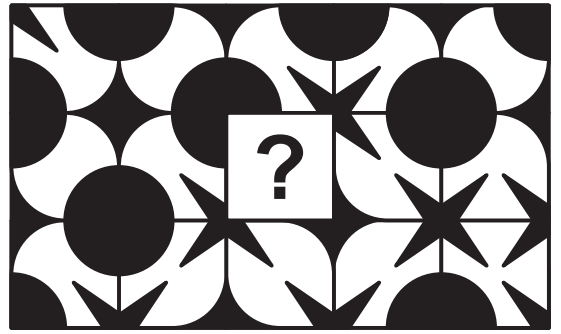
A. **B.** **C.** **D.** **E.**

2. *Amira* is walking from the centre of Kangaroo city to the harbour.
On her way, she passes the following 5 sign posts.
1 of the sign posts is wrong.

Which one is wrong?

A. Centre 2 km / Harbour 9 km
B. Centre 3 km / Harbour 8 km
C. Centre 5 km / Harbour 6 km
D. Centre 8 km / Harbour 3 km
E. Centre 9 km / Harbour 4 km

3. An artist paints in the square alongside all the black cells white,
and all the white cells black.
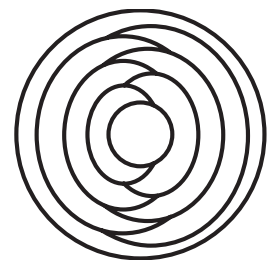
What does the square look like afterwards?

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

4. *Tarik* reflects the letter F about the 2 lines shown.

What will the reflections look like?

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

5. *Cindy* colours each region inside the circle either red, blue or yellow.
She colours neighbouring regions with different colours.
She colours the outer ring of the circle blue.

How many of the regions will be blue in the end?

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

6. *Esra* has 10 sheets of paper. She cuts some of the sheets into 5 parts each.
After that *Esra* has 22 pieces in total.

How many sheets did she cut?

A. 2   **B.** 3   **C.** 6   **D.** 7   **E.** 8

7. *Karin* has 4 baskets, containing 1, 4, 6 and 9 apples.
She wants to have the same number of apples in every basket.

What is the smallest amount of apples that she needs to move?

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

8. The thick black line is a path in the park (see picture).
A dog leaves at point *P* and at the same time, a cat leaves from point *Q*.
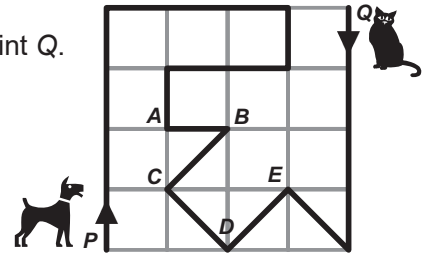
If the dog walks 3 times as fast as the cat,
where are they going to meet?

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

9. The numbers from 1 to 10 have to be placed in the small circles.
Each number is used exactly once.
Numbers in 2 neighbouring circles must have the same sum
as the numbers in the 2 diametrically opposite circles.
Some of the numbers are already placed.
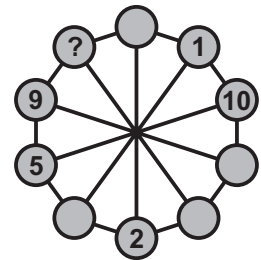
What number should be placed in the circle with the question mark?

A. 3 **B.** 4 **C.** 6 **D.** 7 **E.** 8

10. *Elyse* the bat left her cave for hunting.
At that moment a digital clock showed 20:20.
When *Elyse* comes back and is hanging upside down she sees 20:20 again.

How long has she been hunting outside the cave?

A. 3 hours and 28 minutes **B.** 3 hours and 40 minutes **C.** 3 hours and 42 minutes
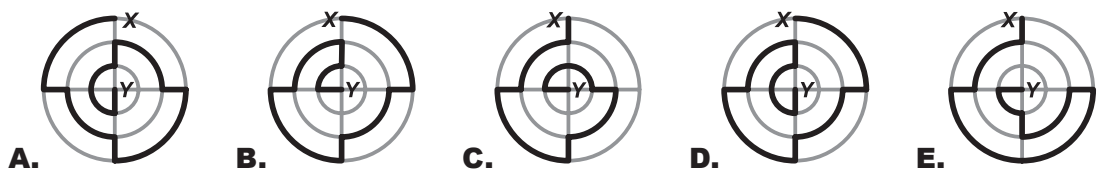**D.** 4 hours and 18 minutes **E.** 5 hours and 42 minutes

11. *Mary* has 10 white cubes, 9 light grey cubes and 8 black cubes.
All of the cubes have the same size.
She glues all these cubes together, to build a big cube.

Which cube can be the one she built?

A. **B.** **C.** **D.** **E.**
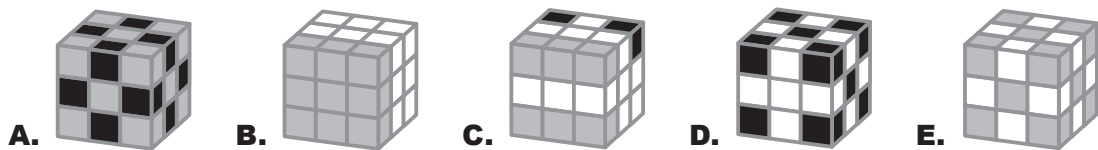
12. There are 5 paths from *X* to *Y* marked with a thick line.

Which one is the shortest?

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

13. A father kangaroo lives with his 3 children. They decide on all matters by vote, and each member of the family gets as many votes as its age. The father is aged 36 and the children are 13, 6 and 4 years old, so the father always wins when they vote.

How many years will it take for the children to win always, if they all agree?

A. 4 **B.** 5 **C.** 7 **D.** 13 **E.** 14

14. *Yorn* glues 6 stickers with different animals on the sides of a cube:
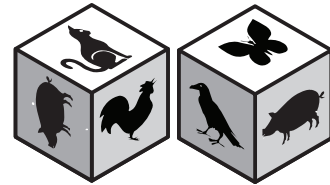
In the picture, you see the cube from 2 different sides.

Which sticker is on the face opposite to the cat?

A.　　　B.　　　C.　　　D.　　　E.

**15.** *Giorgio* has 2 pieces of wire with the same shape:

He puts the 2 pieces together.

Which of the following shapes is **impossible** for *Giorgio* to make?
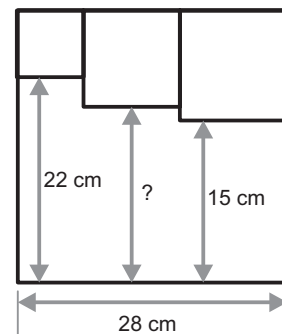
A.　　　B.　　　C.　　　D.　　　E.

16. The following scheme shows the friendship among *Anne*, *Bibi*, *Carla*, *Diana*, *Elsa* and *Fleur*. Each number represents 1 of the girls and each line represents a friendship between 2 girls.
Carla, *Diana* and *Fleur* each have 4 friends.
Carla and *Diana* are both friends of *Bibi*.
Bibi has no other friends.
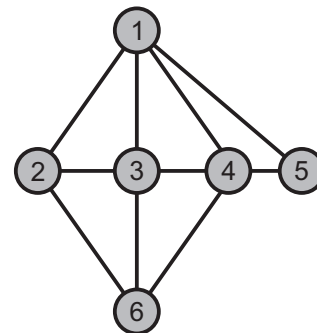
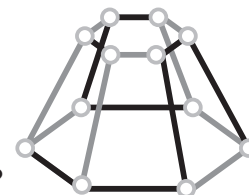Which number represents *Fleur*?

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

17. 3 small squares are drawn inside a big square as shown.

22 cm　　?　　15 cm

28 cm

What is the length of the segment with the question mark?

A. 17 cm　　　**B.** 17,5 cm　　　**C.** 18 cm　　　**D.** 18,5 cm　　　**E.** 19 cm

18. *Tom* built the following object:

What does he see when he looks at the object from above?

A.　　　B.　　　C.　　　D.　　　E.

19. 10 children each choose 1 scoop of ice cream.
4 scoops vanilla, 3 scoops chocolate, 2 scoops lemon and
1 scoop mango are chosen. Each ice cream gets 1 decoration.
4 umbrellas, 3 cherries, 2 wafers and 1 chocolate chip are chosen.
All the ice creams are different.

Which of the following combinations was **not** chosen?

A. chocolate with a cherry **B.** mango with an umbrella **C.** vanilla with an umbrella
D. lemon with a wafer **E.** vanilla with a chocolate chip

20. *Armin* fills 3 vessels with different colours of lemonade.
He puts the same amount of lemonade in each vessel.
Viewed from the front, they seem to have the same size,
but the liquid has risen to different levels in the 3 vessels.
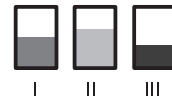
What do the vessels look like, when viewed from above?

**A.** I II III **B.** I II III **C.** I II III **D.** I II III **E.** I II III

21. *Peter* is playing a game with 9 tokens. ●●●●○○○○○

They are white on one side, black on the other side.
In the picture you see how *Peter* has put the tokens down.
In each turn *Peter* has to flip 3 tokens to the other side.
He wants all the tokens to show the same colour.

What is the least number of turns that *Peter* needs?

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

22. On the map you see some islands that are connected by bridges.
A postman has to visit all the islands exactly once.
He began at start and now he stands on the black island at the
centre of the map.
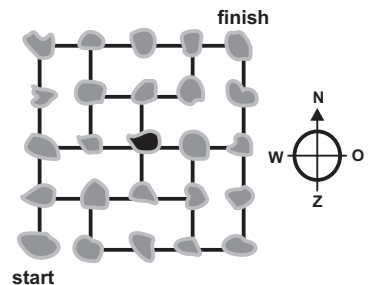
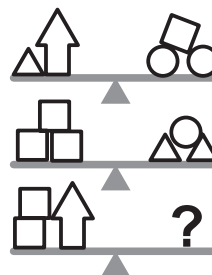How must he move on his next step to end at finish?

A. by going North **B.** by going East **C.** by going Sout
D. by going West **E.** there is no such path

23. *Sam* has to play 15 games in a chess tournament. Up until now *Sam* has won half of his games, lost $\frac{1}{3}$ of his games, and 2 of his games ended in a draw.

How many games has *Sam* left to play in this tournament?

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

24. You see 3 balanced scales.

What should be in the place of the question mark?

A. △△△△□ **B.** △△△○ **c.** △○○○
D. △□□□□ **E.** ○○□