Canguro Matemático Costarricense

Benjamin Test

Fifth grade
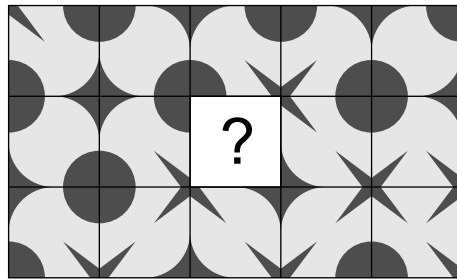
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3 points

 # 1.

Which piece completes the pattern?

(**A**)   (**B**)   (**C**)   (**D**)   (**E**)

 # 2. As Amira is walking from Atown to Betown she passes the five signposts shown. One of them is incorrect. Which one?

Atown 2 km / Betown 9 km   Atown 3 km / Betown 8 km   Atown 5 km / Betown 6 km   Atown 8 km / Betown 3 km   Atown 9 km / Betown 4 km

(**A**)   (**B**)   (**C**)   (**D**)   (**E**)

 # 3. A large square is made up of smaller white and grey squares.
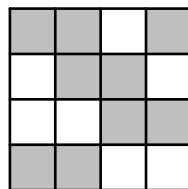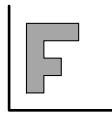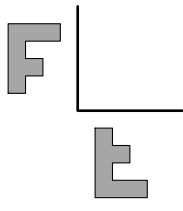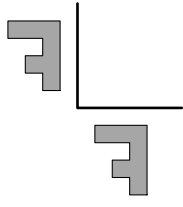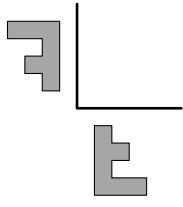
What does the large square look like if the colours of the white and grey squares are interchanged?
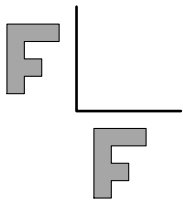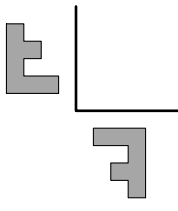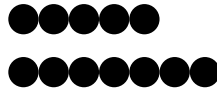
(**A**)   (**B**)   (**C**)   (**D**)   (**E**)

 # 4. Mikas wants to bake 24 muffins for his birthday party. To bake six muffins two eggs are needed. Eggs are sold in boxes of six. How many boxes does Mikas need to buy?

(**A**) 1   (**B**) 2   (**C**) 3   (**D**) 4   (**E**) 8

 # 5. Flora reflects the letter F in the two lines shown. What will the reflections look like?

(**A**)

(**B**)

(**C**)

(**D**)

(**E**)

**# 6.** Kim has several chains of length 5 and of length 7.

By joining chains one after the other, Kim can create different lengths.
Which of these lengths is impossible to make?

(**A**) 10   (**B**) 12   (**C**) 13   (**D**) 14   (**E**) 15

 # 7. Maria has 10 sheets of paper. She cuts some of the sheets into five parts each. After that Maria has 22 pieces in total. How many sheets did she cut?

(**A**) 3   (**B**) 2   (**C**) 6   (**D**) 7   (**E**) 8

 # 8. Cindy colours each region of the pattern below either red, blue or yellow. She colours regions that touch each other different colours. She colours the outer region blue.
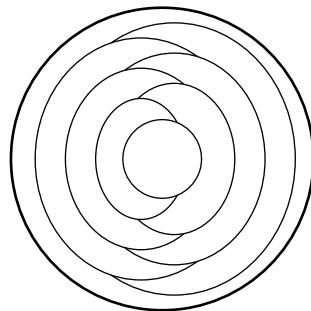
How many regions of the completed pattern are coloured blue?

(**A**) 2   (**B**) 3   (**C**) 4   (**D**) 5   (**E**) 6

 # 9. Four baskets contain 1, 4, 6 and 9 apples respectively. How many apples should be moved between the baskets to have the same number of apples in each basket?

(**A**) 3   (**B**) 4   (**C**) 5   (**D**) 6   (**E**) 7

 # 10. A dog and a cat walk in the park along the path marked by the thick black line. The dog starts from P at the same time as the cat starts from Q. The dogs walks three times as fast as the cat.
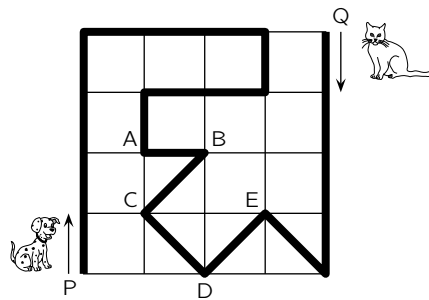
At which point do they meet.

(**A**) at A   (**B**) at B   (**C**) at C   (**D**) at D   (**E**) at E

4 points

 # 11. The Queen tries to find out the three names of Rumpelstiltskin's wife.
She asks her:

> "Are you called Adele Lilly Cleo?"
> "Are you called Adele Laura Cora?"
> "Are you called Abbey Laura Cleo?"

Each time exactly one name and its position was right. What is the name of Rumpelstiltskin's wife?

(**A**) Abbey Lilly Cora   (**B**) Abbey Laura Cora   (**C**) Adele Laura Cleo

(**D**) Adele Lilly Cora   (**E**) Abbey Laura Cleo

 # 12. The numbers from 1 to 10 have to be placed in the small circles, one in each circle. Numbers in any two neighbouring circles must have the same sum as the numbers in the two diametrically opposite circles. Some of the numbers are already placed.
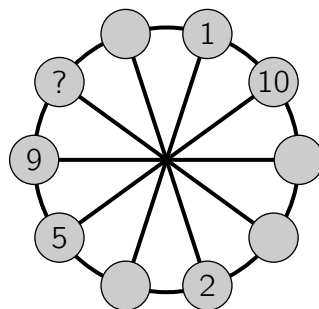
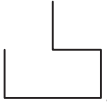What number should be placed in the circle with the question mark?

(**A**) 3   (**B**) 4   (**C**) 6   (**D**) 7   (**E**) 8

 # 13. An elf and a troll meet. The troll always lies, while the elf always tells the truth. They both say exactly one of the following sentences: which one?

(**A**) I am telling the truth   (**B**) You are telling the truth   (**C**) We both are telling the truth

(**D**) I always lie   (**E**) One and only one of us is telling the truth

 # 14. A father kangaroo lives with his three children. They decide on all matters by vote, and each member of the family gets as many votes a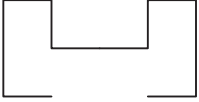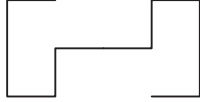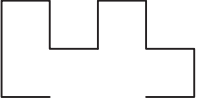s its age. The father is aged 36 and the children are 13, 6 and 4 years old, so the father always wins. How many years will it take for the children to win all votes, if they all agree?

(**A**) 5   (**B**) 6   (**C**) 7   (**D**) 13   (**E**) 14

 # 15. Giorgio has two equal pieces of wire of shape . Which of the following shapes cannot be obtained putting together these two pieces?

(**A**)   (**B**)   (**C**)   (**D**)

(**E**)

 # 16. Amy glues the six stickers shown onto the faces of a cube: The pictures below show the cube in two different positions.
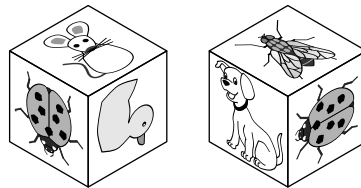
Which sticker is on the face opposite the face with the mouse on?

(**A**)   (**B**)   (**C**)   (**D**)   (**E**)

 # 17. Several teams came to the summer Kangaroo camp. Each team has 5 or 6 members. There are 43 people in total. How many teams are at this camp?

(**A**) 4   (**B**) 6   (**C**) 7   (**D**) 8   (**E**) 9

 # 18. The teacher writes the numbers from 1 to 8 on the board. The teacher then covers the numbers with triangles, squares and a circle. If you add the four numbers covered by the triangles, the sum is 10. If you add the three numbers covered by the squares, the sum is 20.
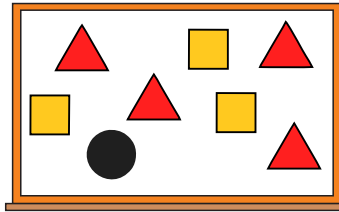
Which number is covered by the circle?

(**A**) 3   (**B**) 4   (**C**) 5   (**D**) 6   (**E**) 7

 # 19. Which key would it be impossible to cut into three different figures of five shaded squares?

(**A**)   (**B**)   (**C**)   (**D**)   (**E**)
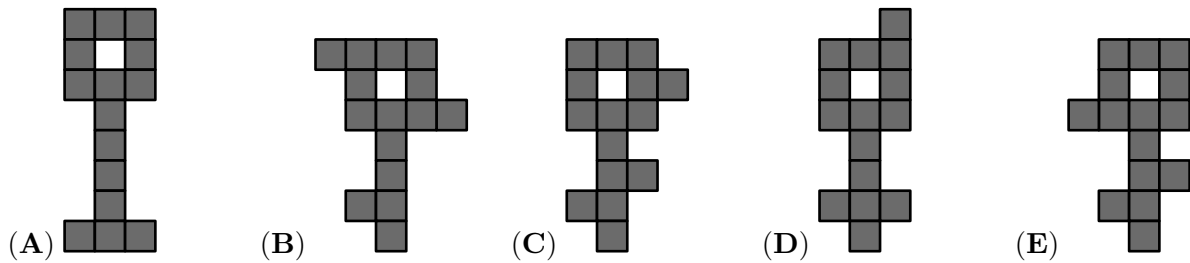
 # 20. Ann replaces letters in the calculation $KAN - ROO + GA$ with numbers from 1 to 9 and then calculates the result. The same letters are replaced by the same numbers and different letters by different numbers. What is the largest possible result she could get?

(**A**) 925   (**B**) 933   (**C**) 939   (**D**) 942   (**E**) 948

5 points

 # 21. The picture below shows the friendships of the six girls Ann, Beatrice, Chloe, Diana, Elisabeth and Fiona. Each number represents one of the girls and each line joining two numbers represents a friendship between those two girls. Chloe, Diana and Fiona each have four friends. Beatrice is friends with only Chloe and Diana.
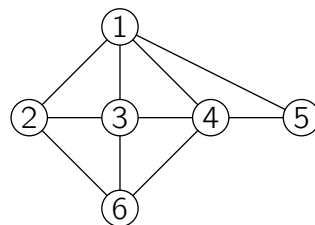
Which number represents Fiona?

(**A**) 2   (**B**) 3   (**C**) 4   (**D**) 5   (**E**) 6

 # 22. When Elise the bat leaves her cave, a digital clock shows 20:20
When she returns and is hanging upside down, she sees 20:20 on the clock again.
How long has she been away from her cave?

(**A**) 3 hours and 28 minutes   (**B**) 3 hours and 40 minutes   (**C**) 3 hours and 42 minutes

(**D**) 4 hoursand and 18 minutes   (**E**) 5 hours and 42 minutes

 # 23. Mary put the same amount of liquid in three rectangular vessels. Viewed from the front, they seem to have the same size, but the liquid has risen to different levels in the three vessels.

Which of the following images represents the three vessels when viewed from above?

(**A**) I   II   III   (**B**) I   II   III   (**C**) I   II   III

(**D**) I   II   III   (**E**) I   II   III
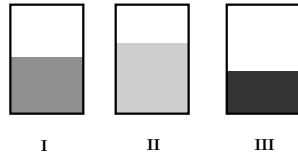

 # 24. Mary has exactly 10 white cubes, 9 light grey cubes and 8 dark grey cubes, all of the same size. She glues all these cubes together to build a big cube. One of the cubes below is the one she builds. Which one is it?

(**A**)   (**B**)   (**C**)   (**D**)   (**E**)
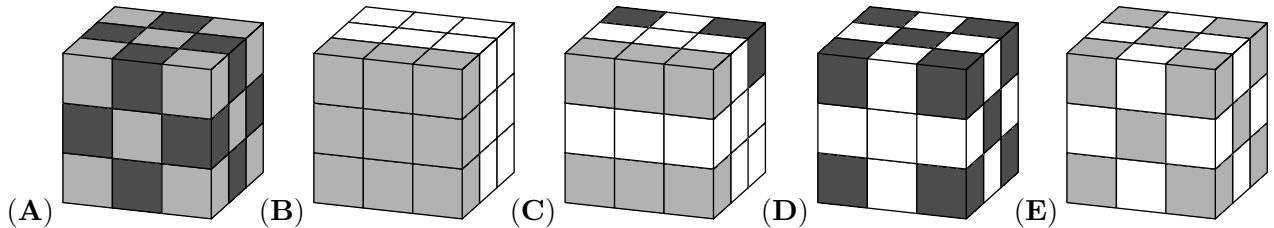
 # 25. Nine tokens are black on one side and white on the other. Initially, four tokens have the black side upwards.
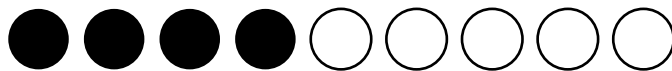
In each turn you have to flip three tokens. What is the least number of turns you need to have all tokens showing the same colour?

(**A**) 1   (**B**) 2   (**C**) 3   (**D**) 4   (**E**) 5

7

 # 26. The diagrams show five paths from X to Y marked with a thick line. Which path is the shortest?

(**A**) (**B**) (**C**)

(**D**) (**E**)
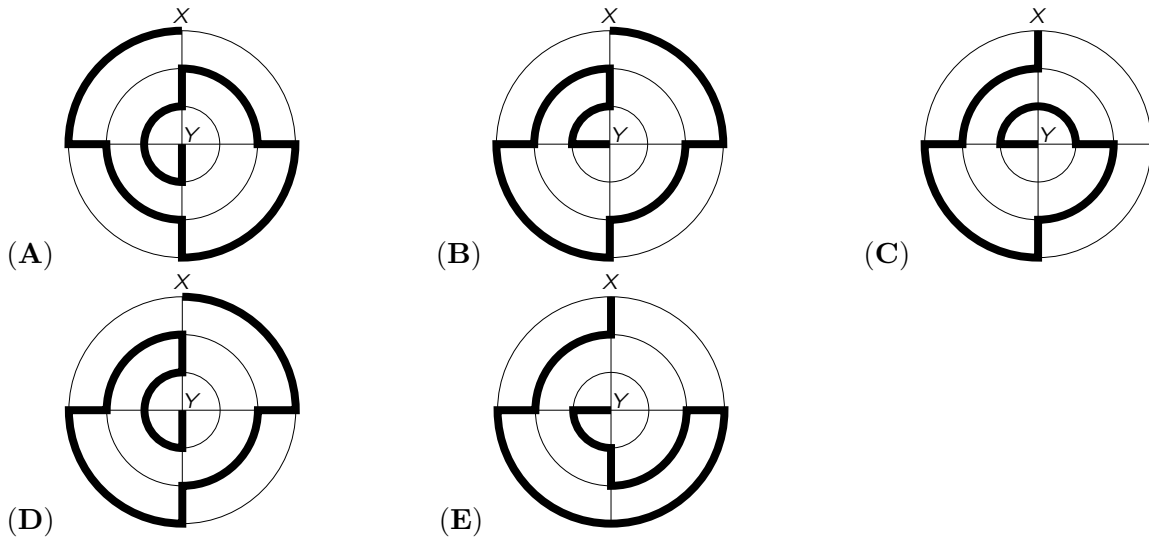
 # 27. What does the object in the picture look like when viewed from above?

(**A**) (**B**) (**C**)

(**D**) (**E**)
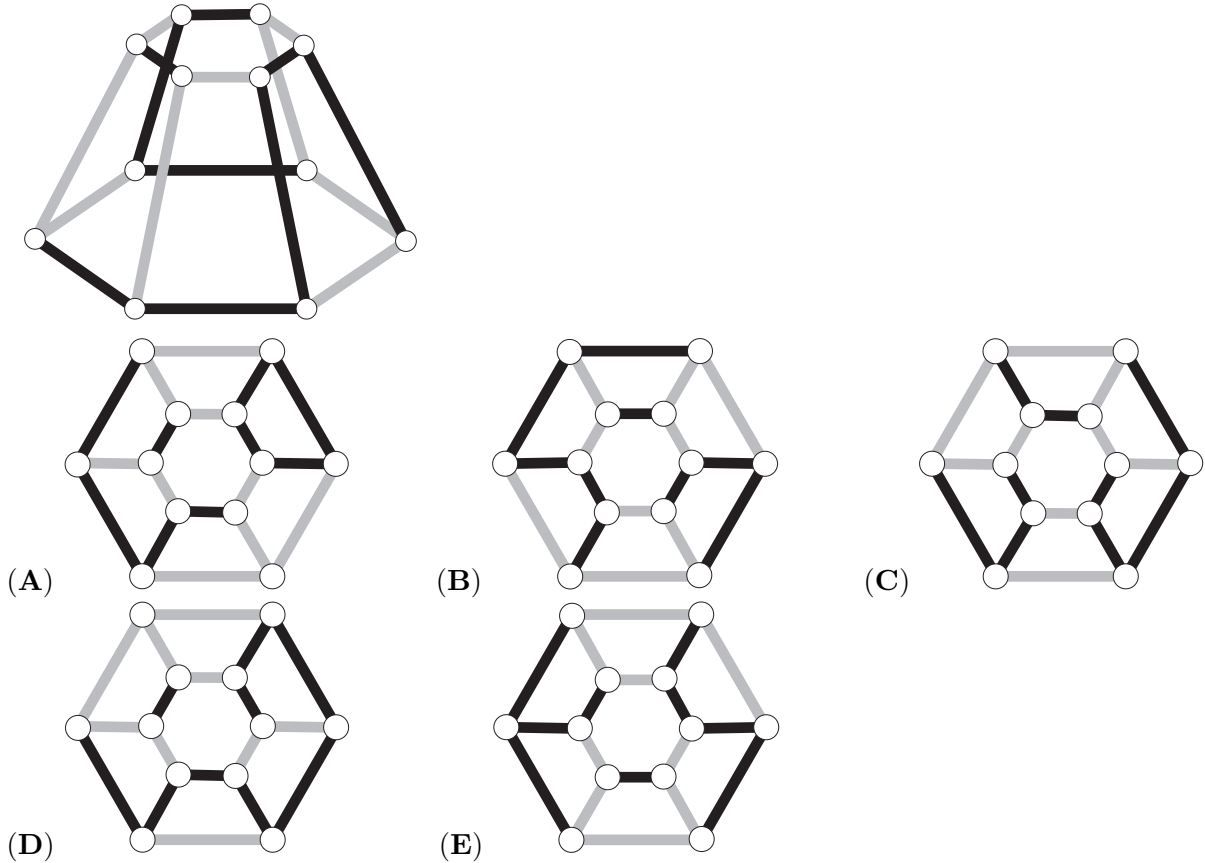
28. Three small squares are drawn inside a larger square as shown.

22 cm ? 15 cm

28 cm
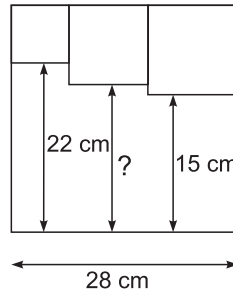
What is the length of the line marked with a question mark?

(**A**) 17 cm   (**B**) 17.5 cm   (**C**) 18 cm   (**D**) 18.5 cm   (**E**) 19 cm

29. Ten people each order one scoop of ice cream. They order 4 scoops of vanilla, 3 scoops of chocolate, 2 scoops of lemon and 1 scoop of mango. They top the ice creams with 4 umbrellas, 3 cherries, 2 wafers and 1 chocolate chip. They use one topping on each scoop, such that no two ice creams are alike.
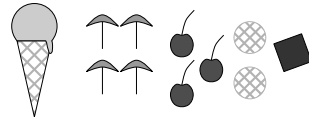
Which of the following combinations is **NOT** possible.

(**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

30. The figure shows a map of some islands and how they are connected by bridges. A postman has to visit each island exactly once. He starts on the island marked "start" and would like to finish on the island marked "finish". He has just reached the black island in the centre of the map.

finish

N
W ⊕ E
S

start
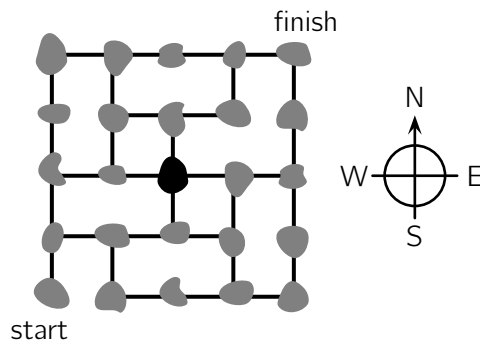
In which direction should he move to be able to complete his route?

(**A**) by going North   (**B**) by going East   (**C**) by going South

(**D**) by going West   (**E**) there is no such path as the postman wishes to follow

Name:_____

Institution:_____

01.	A	B	C	D	E

02.	A	B	C	D	E

03.	A	B	C	D	E

04.	A	B	C	D	E

05.	A	B	C	D	E

06.	A	B	C	D	E

07.	A	B	C	D	E

08.	A	B	C	D	E

09.	A	B	C	D	E

10.	A	B	C	D	E

11.	A	B	C	D	E

12.	A	B	C	D	E

13.	A	B	C	D	E

14.	A	B	C	D	E

15.	A	B	C	D	E

16.	A	B	C	D	E

17.	A	B	C	D	E

18.	A	B	C	D	E

19.	A	B	C	D	E

20.	A	B	C	D	E

21.	A	B	C	D	E

22.	A	B	C	D	E

23.	A	B	C	D	E

24.	A	B	C	D	E

25.	A	B	C	D	E

26.	A	B	C	D	E

27.	A	B	C	D	E

28.	A	B	C	D	E

29.	A	B	C	D	E

30.	A	B	C	D	E

Costa Rica