

Canguro Matemático Costarricense



Benjamin Test
Fifth grade

Name of the student: _____

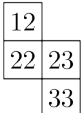
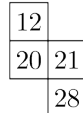
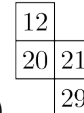
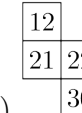
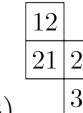
Name of the institution: _____

3 points

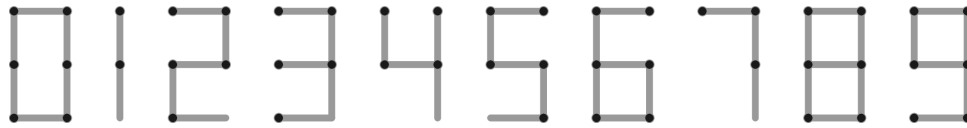
1. Holger fills the rest of the table with the numbers up to 40, following the system shown:

1	2	3	4	5	6	7	8
9	10	11	12				

Which of the pieces shown could he cut from the table?

- (A)  (B)  (C)  (D)  (E) 

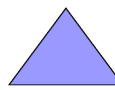

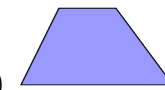
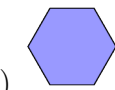

2. Matchsticks can be placed to build numbers, as shown. For example, to build the number 15, one needs 7 matchsticks, and one needs the same number of matchsticks to build the number 8.



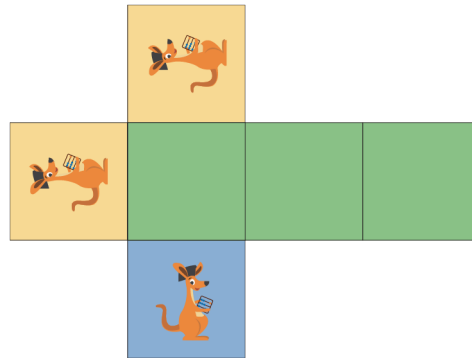
What is the largest positive number that can be built with seven matchsticks?

- (A) 31 (B) 51 (C) 74 (D) 711 (E) 800

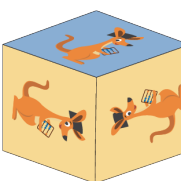
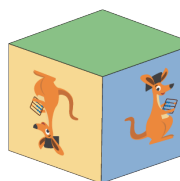
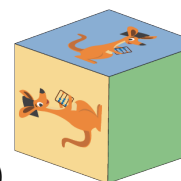
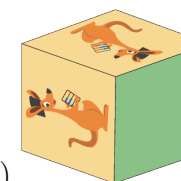
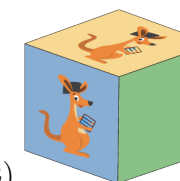
3. Which of the following shapes cannot be divided into two triangles by a single straight line?

- (A)  (B)  (C)  (D)  (E) 

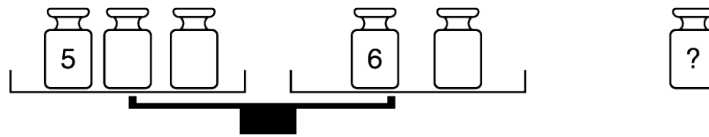
4. Rosalinde has a piece of paper, marked as shown, which she folds to form a cube.



Which of the following five cubes can she get from this paper?

- (A)  (B)  (C)  (D)  (E) 

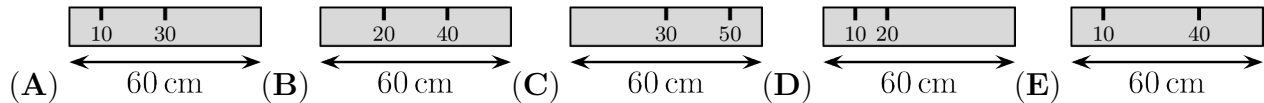
5. There are six weights of 1, 2, 3, 4, 5 and 6 kg. Rossitza puts five of them on the scales and puts one weight aside. The scales is balance.



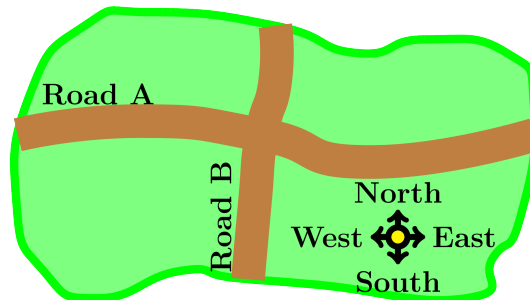
Which weight did she put aside?

- (A) 1 kg (B) 2 kg (C) 3 kg (D) 4 kg (E) can't be sure

6. Ali has a 60 cm ruler. Unfortunately, some of the markings have faded away. He is able to measure any of the lengths 10, 20, 30, 40, 50 and 60 cm using his ruler only once. Which is Ali's ruler?



7. There are 7 houses north of Road A, 8 houses east of Road B and 5 houses south of Road A.



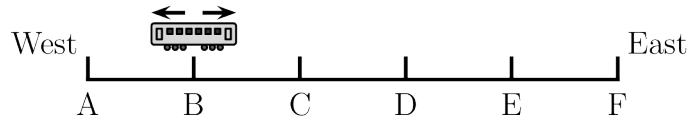
How many houses are west of Road B?

- (A) 4 (B) 5 (C) 6 (D) 7 (E) 8

8. There are 8 cars waiting in a queue for the ferry. Every car contains either 2 or 3 people. There are 19 people in total waiting for the ferry. How many cars contain exactly 2 people?

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

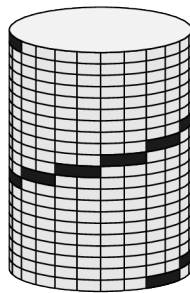
9. The Metro line has 6 stations, A, B, C, D, E, and F. The train stops at every station. When it reaches one of the two end stations, it changes its direction. The train driver started driving at station B and her first stop was station C.



Which station will be her 96th stop?

- (A) A (B) B (C) C (D) D (E) E

10. Claude climbs from the bottom to the top of the cylindrical tower shown.

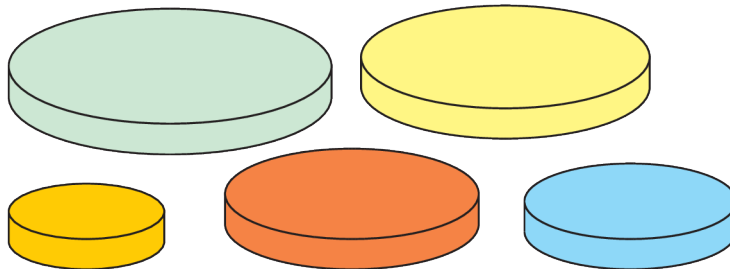


The steps are all equal sized. Nine steps are visible. How many steps are not visible?

- (A) 9
 (B) 10
 (C) 11
 (D) 12
 (E) 13

4 points

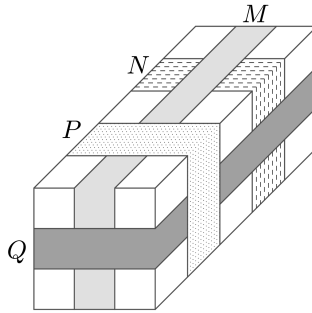
11. Anna has five circular discs of different sizes. She wants to build a tower of four discs so that each disc in her tower is smaller than the disc immediately below it.



How many different towers could Anna build?

- (A) 4 (B) 5 (C) 9 (D) 12 (E) 20

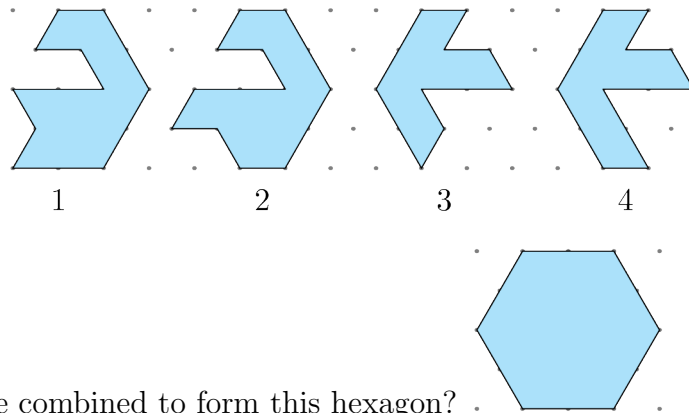
12. The picture shows a parcel around which four tapes labelled M , N , P and Q are placed.



In what order, from first to last, were the tapes placed?

- (A) M, N, Q, P (B) N, M, P, Q (C) N, Q, M, P
 (D) N, M, Q, P (E) Q, N, M, P

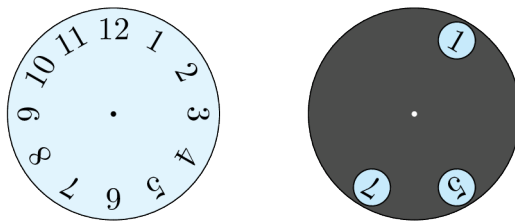
13. Alice has the four puzzle pieces shown.



Which pair can be combined to form this hexagon?



- (A) 1 and 2 (B) 1 and 3 (C) 2 and 3 (D) 2 and 4 (E) 1 and 4

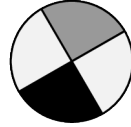
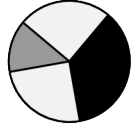
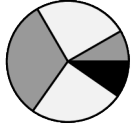
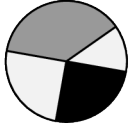

14. The grey circle with three holes punched in it is placed on top of the clock-face.



The grey circle is turned around its center. Which three numbers is it possible to see at the same time?

- (A) 2, 4 and 9 (B) 1, 5 and 10 (C) 4, 6 and 12 (D) 3, 6 and 9 (E) 5, 7 and 12

15. John glued the three pieces of paper shown.  onto the black circle.  Which of the following patterns could he not obtain?

- (A)  (B)  (C)  (D)  (E) 

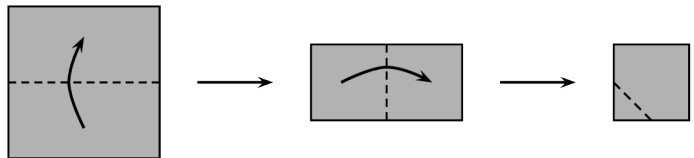
16. 6 beavers and 2 kangaroos are standing in a line. Amongst any 3 consecutively numbered animals, exactly 1 is a kangaroo.



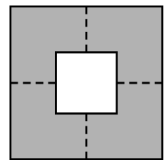
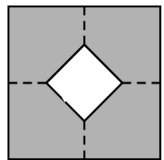
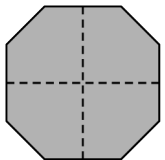
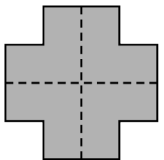
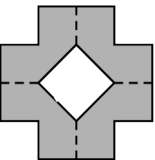
Which numbered animal is a kangaroo?

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

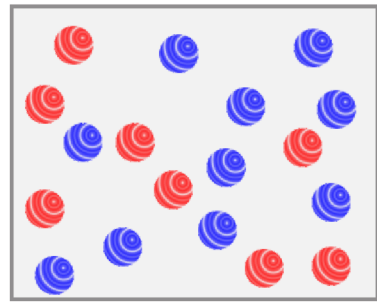
17. Rebecca folds a square piece of paper twice. Then she cuts off one corner. Next, she unfolds the paper.



What does the paper look like once unfolded?

- (A)  (B)  (C)  (D)  (E) 

18. Adam and Brenda have 9 marbles each. Together, they have 8 grey and 10 black marbles. Brenda has twice as many black marbles as grey marbles.

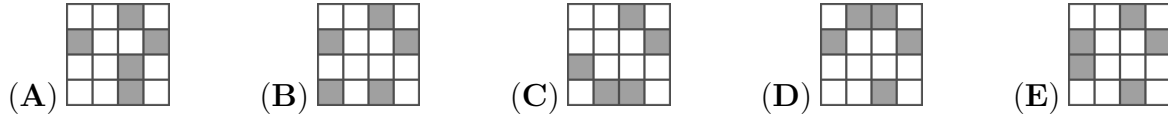


How many black marbles does Adam have?

- (A) 3 (B) 4 (C) 5 (D) 6 (E) 0

19. Maria has shaded exactly 5 cells in a 4×4 grid. She challenges 5 of her friends to guess which cells she has shaded. The grids they have drawn are shown below. Maria looks at them and says: "One of you is right and each of the rest of you has four cells correct."

Which is the correct answer?



20. Else has two machines. When she puts a square sheet of paper in machine R, it turns the paper 90° clockwise, as shown in the picture.



When she puts the paper in machine S, it stamps the paper with a



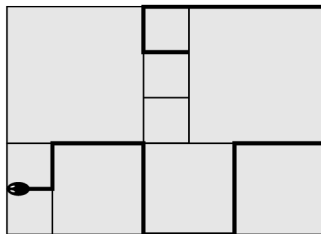
In which order are the machines used to produce the result shown?



- (A) SRR (B) RSR (C) RSS (D) RRS (E) SRS

5 points

21. The Potters have a patio which is tiled with square tiles of three different sizes. The smallest squares have a perimeter of 80 cm. A snake rests on the patio, as shown in the diagram.



What is the length of the snake?

- (A) 380 cm (B) 400 cm
 (C) 420 cm (D) 440 cm
 (E) 1680 cm

22. When I look in a mirror, I can see the image of my digital clock standing on the table behind me, as shown.



What image will I see when I look in the mirror 30 minutes later?

- (A) (B) (C) (D) (E)

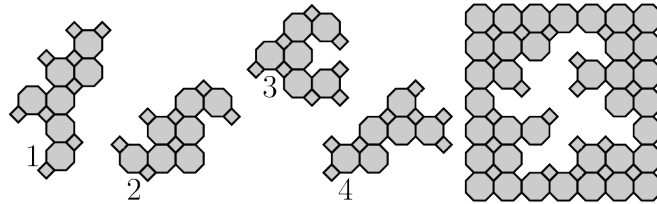
23. Maria, Peter, Richard and Tina were playing football in the classroom and one of them broke a window. When the principal asked who did it, she got the following responses:

Maria: “It was Peter.”
 Peter: “It was Richard.”
 Richard: “It wasn’t me.”
 Tina: “It wasn’t me.”

Only one child was telling the truth. Who broke the window?

- (A) Maria (B) Tina (C) Peter (D) Richard
 (E) can’t be determined with certainty

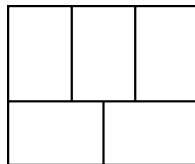
24.



Which two tiles should be used to complete the puzzle?

- (A) 1 and 2 (B) 1 and 4 (C) 2 and 3 (D) 2 and 4 (E) 3 and 4

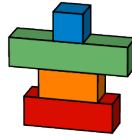
25. The diagram shows five rectangles. Lukas wants to colour the rectangles red, blue and yellow so that any two adjacent rectangles are coloured different colours.



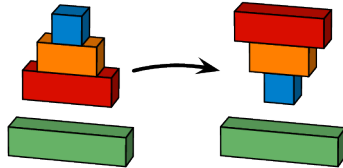
In how many different ways can he do this?

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

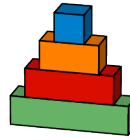
26. Goran has four blocks, stacked as shown.



In a single move, Goran can take some, or all, of the blocks from the top of the stack and place them upside down, as shown.



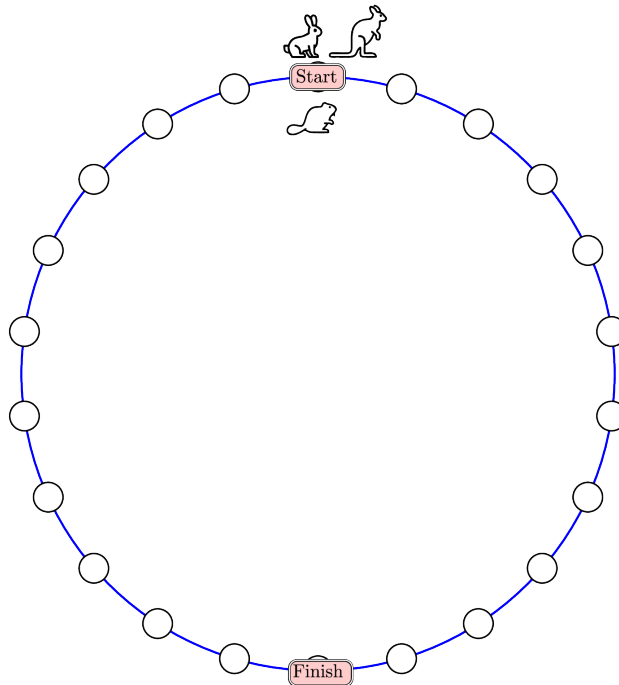
He wants the blocks to be stacked in this order:



What is the smallest number of moves he needs to make to get to the correct order?

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

27. A rabbit, a beaver and a kangaroo are having a competition. The beaver moves one space at a time, the rabbit moves two spaces at a time and the kangaroo moves three spaces at a time. They all start from the point marked START. The winner is the animal who lands exactly on the point marked FINISH in the smallest number of complete moves.



Who wins the competition?

- (A) the beaver (B) the rabbit (C) the kangaroo (D) the kangaroo and the rabbit
 (E) the kangaroo and the beaver

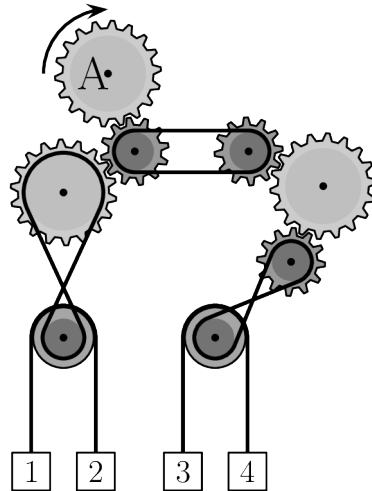
28. Lonneke wants the sum of the numbers in the white cells to equal the sum of the numbers in the grey cells.

1	3	5	2	13
7	4	6	8	11

Which two numbers does she need to swap?

- (A) 1 and 11 (B) 2 and 8 (C) 3 and 7 (D) 4 and 13 (E) 7 and 13

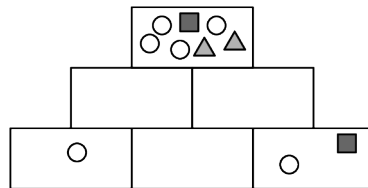
29. The gear marked A is turned clockwise, as shown.



Which two boxes will move upwards?

- (A) 1 and 4 (B) 2 and 3 (C) 1 and 3 (D) 2 and 4
 (E) It cannot be determined

30. Tian wants to draw figures in the six boxes of the pyramid shown.



Each box should contain all of the figures in the two boxes directly below it and nothing more. She has drawn the figures in some of the boxes already. Which figures should she draw in the box in the middle of the bottom row?

- (A) (B) (C) (D)
 (E)

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

