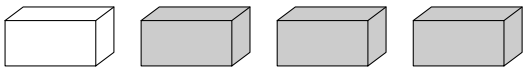
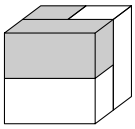
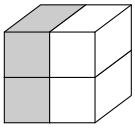
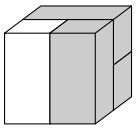
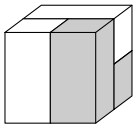
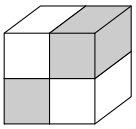
CANADIAN MATH KANGAROO CONTEST PROBLEMS

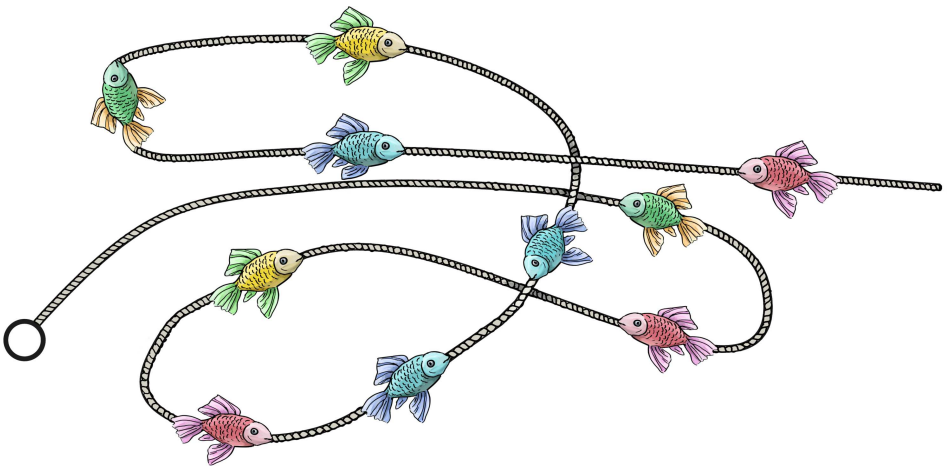
PART A: EACH CORRECT ANSWER IS WORTH 3 POINTS

1. Erik has 4 bricks: 

Which of the cubes shown below can he make with his 4 bricks?

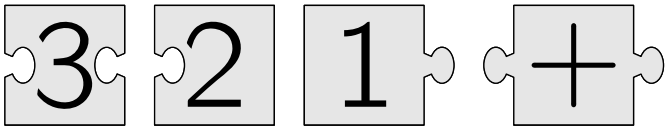
(A)  **(B)**  **(C)**  **(D)**  **(E)** 

2. How many fish will have their heads pointing towards the ring when we straighten the line?



(A) 3 **(B)** 5 **(C)** 6 **(D)** 7 **(E)** 8

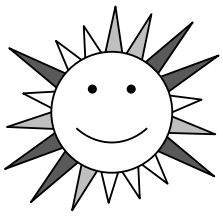
3. When you put the 4 puzzle pieces together correctly, they make a rectangle with an addition.



What is the result of this addition?

(A) 6 **(B)** 15 **(C)** 18 **(D)** 24 **(E)** 33

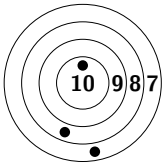
4. Alaya draws a picture of the sun.

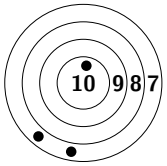


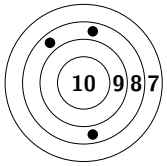
Which of these is a part of her picture?

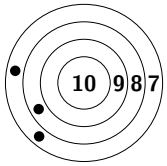
(A)  **(B)**  **(C)**  **(D)**  **(E)** 

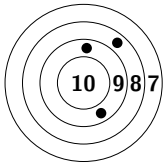
5. Ricky participated in a shooting challenge and scored the most points.
Which target was Ricky's?

(A) 

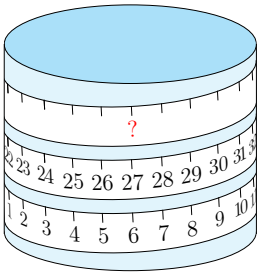
(B) 

(C) 

(D) 

(E) 

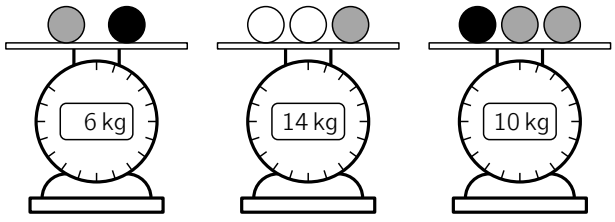
6. A measuring tape is wrapped around a cylinder.



Which number should be at the place shown by the question mark?

(A) 33 **(B)** 42 **(C)** 48 **(D)** 53 **(E)** 69

7. Rosana has balls in 3 different colours. Balls of the same colour have the same weight.



What is the weight of one (1) white ball ◯?

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

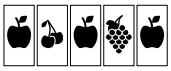
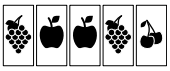
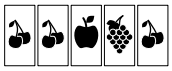
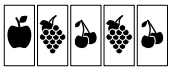
8. Anna, Bill, Cynthia, and Della have one pet each. The pets are a dog, a cat, a fish, and a hamster. Anna does not have the fish nor the dog. Bill does not have the dog nor the fish nor the hamster. Who has the hamster?

(**A**) Anna (**B**) Bill (**C**) Cynthia

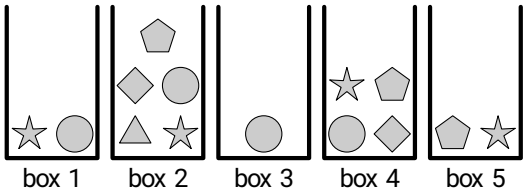
(**D**) Della (**E**) Cannot be certain

PART B: EACH CORRECT ANSWER IS WORTH 4 POINTS

9. Nisa has three different types of cards in a game: apple  , cherry  and grapes  .
She chooses two cards from a set of 5 cards and swaps their places. Nisa wants to arrange the cards so that all the cards with the same fruit on are next to each other.
For which set is this **not** possible?

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

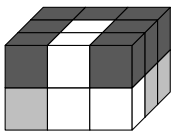
10. Sofie wants to pick 5 different shapes from 5 different boxes. She can only pick 1 shape from each box.

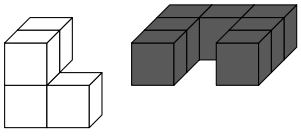


Which shape must she pick from box 4?

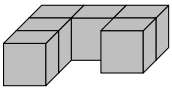
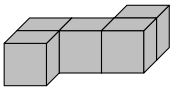
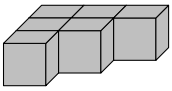
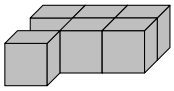
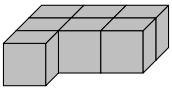
(**A**)  (**B**)  (**C**)  (**D**)  (**E**) 

11. 18 cubes are coloured white or grey or black and are arranged as shown below.



The figures on the right show the white and the black parts. 

Which of the following is the grey part?

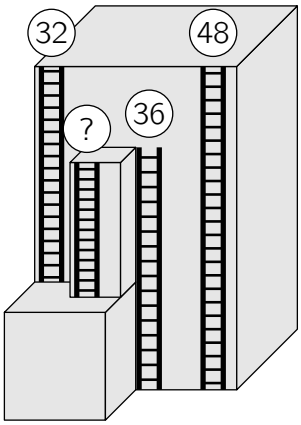
(**A**)  (**B**)  (**C**)  (**D**)  (**E**) 

12. In an ice cream shop there is some money in a drawer. After selling 6 ice creams, there are \$70 in the drawer. After selling a total of 16 ice creams, there are \$120 in the drawer.

How many dollars were there in the drawer at the start?

(**A**) 20 (**B**) 30 (**C**) 40 (**D**) 50 (**E**) 60

13. On a tall building there are 4 fire escape ladders, as shown. The heights of 3 ladders are shown.



What is the height of the shortest ladder?

(**A**) 12 (**B**) 14 (**C**) 16 (**D**) 20 (**E**) 22

14. Nora plays with three cups on the kitchen table.

She takes the cup on the left, flips it over, and puts it to the right of the other cups.

The picture shows the first move. 

What do the cups look like after 10 moves?

(**A**) 

(**B**) 

(**C**) 

(**D**) 

(**E**) 

15. Two lighthouses blink at night to steer the boats safely into the harbor in the dark or in bad weather. One lighthouse flashes every five seconds, the other every seven seconds. How many seconds will elapse between the time the two lighthouses blink together and the next time it happens?

(**A**) 5 (**B**) 7 (**C**) 12 (**D**) 35 (**E**) Never

16. Eva has the 5 stickers shown:

She stuck one of them on each of the 5 squares of this board:

1	2	3	4	5

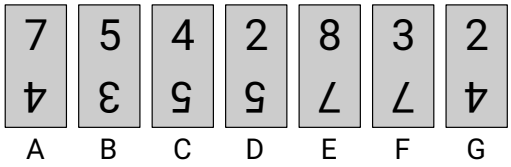
so that  is not on square 5,  is on square 1, and  is next to both  and  .

On which square did Eva stick  ?

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

PART C: EACH CORRECT ANSWER IS WORTH 5 POINTS

17. Seven cards are arranged as shown.

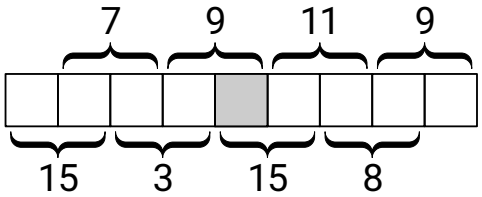


Each card has two numbers on with one of them written upside down. The teacher wants to rearrange the cards so that the sum of the numbers in the top row is the same as the sum of the numbers in the bottom row. She can do this by turning one of the cards upside down.

Which card must she turn?

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

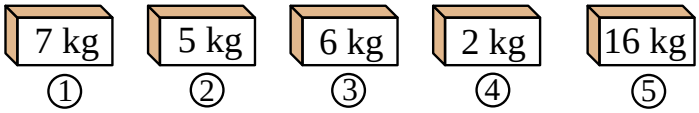
18. The numbers 1 to 9 are placed in the squares shown with a number in each square. The sums of all pairs of neighbouring numbers are shown.



Which number is placed in the shaded square?

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

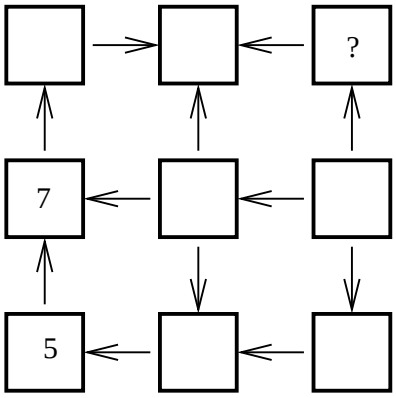
19. Each of the 5 boxes contains either apples or bananas, but not both. The total weight of all the bananas is 3 times the weight of all the apples.



Which boxes contain apples?

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

20. Elena wants to write the numbers from 1 to 9 in the squares shown. The arrows always point from a smaller number to a larger one. She has already written 5 and 7.



Which number should she write instead of the question mark?

(**A**) 2 (**B**) 3 (**C**) 4 (**D**) 6 (**E**) 8

21. The sum of the digits of a given two digit number is 12. If the digits exchange their places, then the new number is 18 more than the original one.

What is the product of the digits of this number?

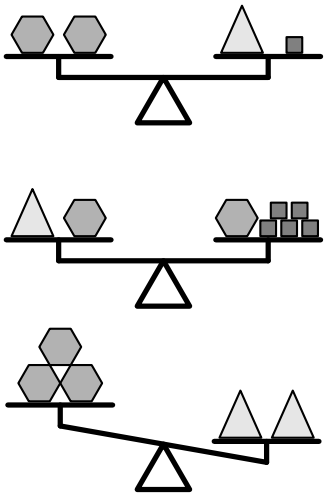
(**A**) 15 (**B**) 24 (**C**) 35 (**D**) 27 (**E**) 32

22. George has some marbles in a box. Every turn he removes half of the marbles, adds 2, and then doubles the remaining marbles. After 35 turns there are 148 marbles in the box.

How many marbles did the box contain at the beginning?

(**A**) 8 (**B**) 48 (**C**) 78 (**D**) 100 (**E**) 113

23. Martin placed three different types of objects, hexagons ⬢, squares ■ and triangles △, on three sets of scales, as shown.



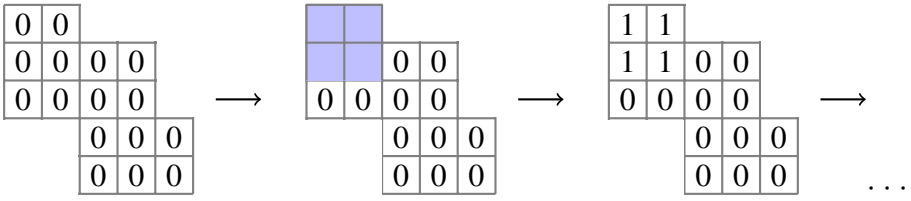
What does he need to put on the left-hand side of the third scale for these scales to balance?

(**A**) 1 square (**B**) 2 squares (**C**) 1 hexagon (**D**) 1 triangle (**E**) 2 triangles

24. Berta has a shape made up of four glued squares  .

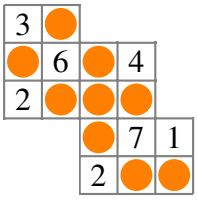
She places the shape on a grid figure so that it completely covers four of the grid cells.

Every time Berta does this, she increases the number in the four covered cells by 1, shown below.



Starting with 0 in every cell of the grid, Berta places her shape several times as described.

In the end, Berta hid some numbers with circle stickers:



What is the largest number in her last figure?

(**A**) 7 (**B**) 10 (**C**) 8 (**D**) 9 (**E**) 11