

# KSF 2018 - Problems Ecolier (Class 3 & 4)

Time Allowed: 120 minutes

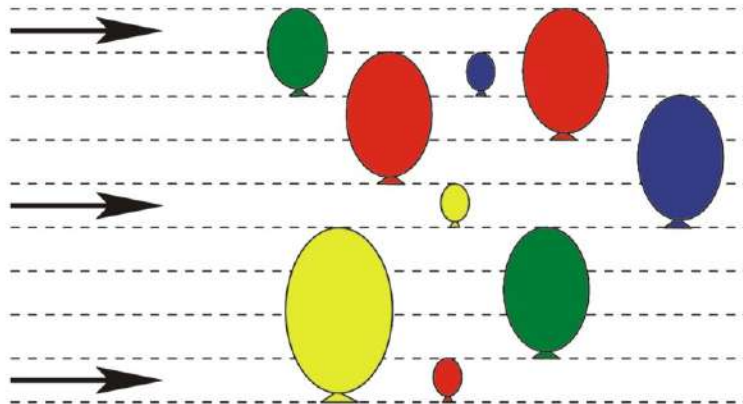
## SECTION ONE - (3 points)

1. Leonie has 10 rubber stamps. Each stamp has one of the digits: 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. She prints the date of the Kangaroo contest:

1 5 0 3 2 0 1 8

How many stamps does she use?

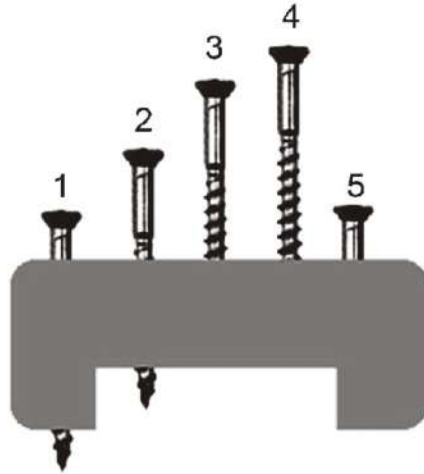
- (A) 5 (B) 6 (C) 7  
(D) 9 (E) 10
2. The picture shows 3 flying arrows and 9 fixed balloons. When an arrow hits a balloon, it bursts, and the arrow flies further in the same direction. How many balloons will be hit by the arrows?



- (A) 2 (B) 3 (C) 4  
(D) 5 (E) 6
3. Susan is 6 years old. Her sister is one year younger and her brother is one year older. What is the sum of the ages of the three siblings?

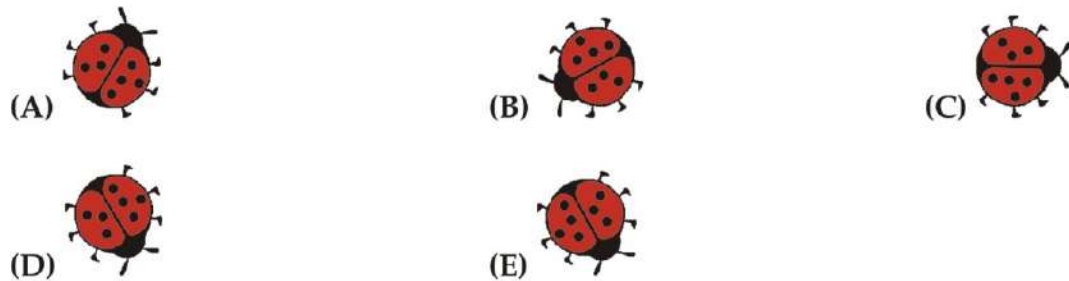
- (A) 10 (B) 15 (C) 18  
(D) 21 (E) 30


4. The picture shows five screws in a block. Four screws are the same length. One screw is shorter. Which screw is the shortest?

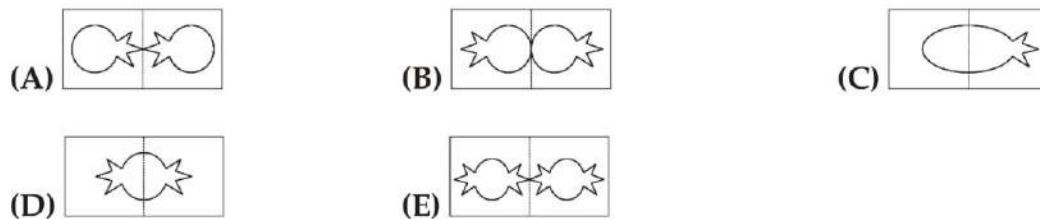


- (A) 1 (B) 2 (C) 3  
(D) 4 (E) 5

5. Here is a picture of Sophie the ladybird . She turns. Which picture of the ladybirds below is not Sophie?



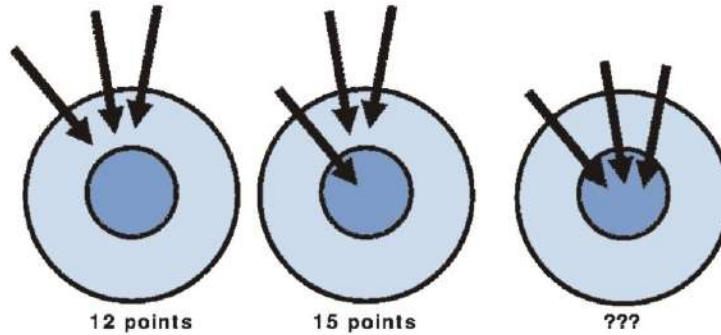
6. Lucy folds a sheet of paper in half. Then she cuts a piece out of it . What will she see when she unfolds the paper?



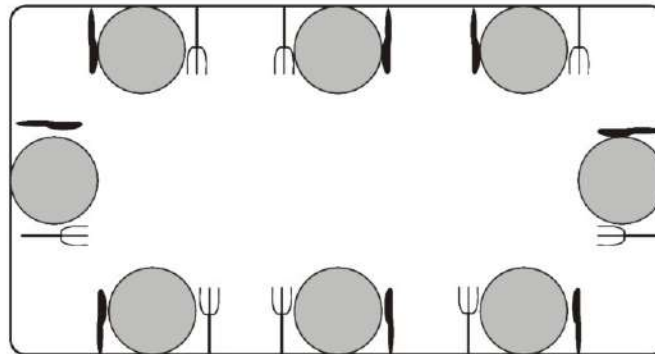
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7. First, Diana scores 12 points in total with three arrows. On her second turn she scores 15 points. How many points does she score on her third turn?

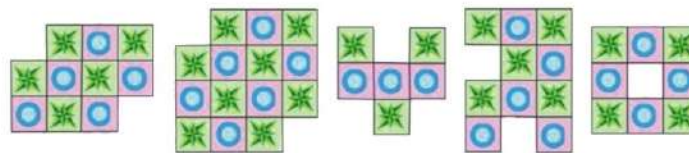


- (A) 18  
(D) 21
- (B) 19  
(E) 22
- (C) 20
8. Mike sets the table for 8 people. He must set the table correctly for the persons sitting at the table. Correctly means the fork on the left of each plate and the knife on the right. How many people does Mike set the table correctly for?



- (A) 5  
(D) 2
- (B) 4  
(E) 3
- (C) 6
- SECTION TWO - (4 points)**

9. Roberto makes designs using tiles like this . How many of the 5 designs can he make?





























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






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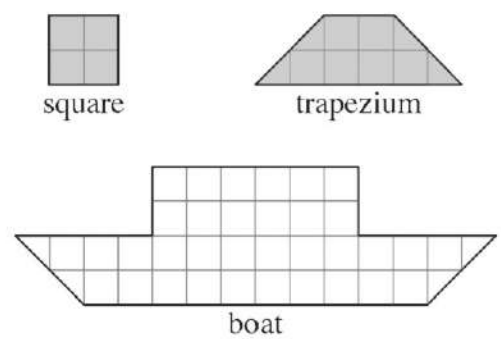
10.

				
				
				
			?	
				

Albert fills the grid with these five figures: , , , , . Each figure appears exactly once in every column and every row. Which figure must Albert put in the cell with the question mark?

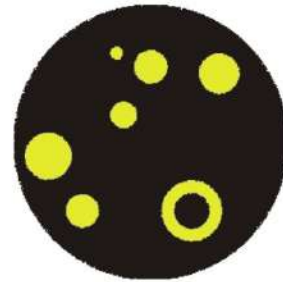
- (A)                       (B)                       (C) 
- (D)                       (E) 

11. Tom cuts two types of pieces out of grid paper. What is the smallest number of pieces that Tom needs in order to cover completely the boat in the picture?



- (A) 5                                      (B) 6                                      (C) 7
- (D) 8                                      (E) 9

12. The colours in this picture must be swapped over. Then the picture has to be turned around. What does the new picture look like?

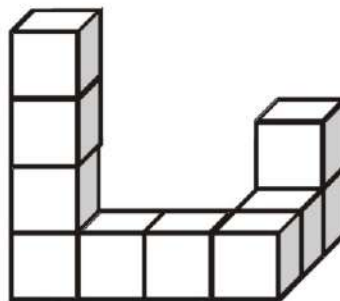


- (A) (B) (C) (D) (E)

13. Peta rabbit has 20 carrots. She eats 2 carrots every day. She ate the 12<sup>th</sup> carrot on Wednesday. On which day did she start eating the carrots?



- (A) Monday (B) Tuesday  
(C) Wednesday (D) Thursday  
(E) Friday
14. Toby glues 10 cubes together to make the structure shown below. He paints the whole structure, even the bottom. How many cubes are painted on exactly 4 of their faces?



- (A) 6 (B) 7 (C) 8  
(D) 9 (E) 10

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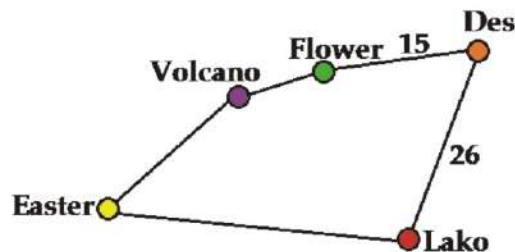
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15. There are 8 flowers on a rose bush. Some butterflies and some dragonflies sit on the flowers. There are no more than one insect per flower. More than half of the flowers are occupied. The number of butterflies on the flowers is twice the number of dragonflies on the flowers.



How many butterflies sit on the flowers?

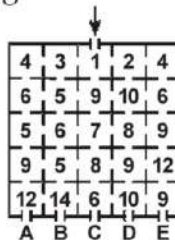
- (A) 2                                      (B) 3                                      (C) 4  
(D) 5                                      (E) 6
16. Captain Kook wants to sail from the island called Easter through every island on the map and back to Easter. The total journey is 100 kilometers (*km*) long. The distance between Des and Lako is the same as the distance between Easter and Flower via Volcano. How far is it directly from Easter to Lako?



- (A) 17 *km*                                      (B) 23 *km*                                      (C) 26 *km*  
(D) 33 *km*                                      (E) 35 *km*

## SECTION THREE - (5 points)

17. The rooms in Kanga's house are numbered. Baby Roo enters the main door, passes through some rooms and leaves the house. The numbers of the rooms that he visits are always increasing.



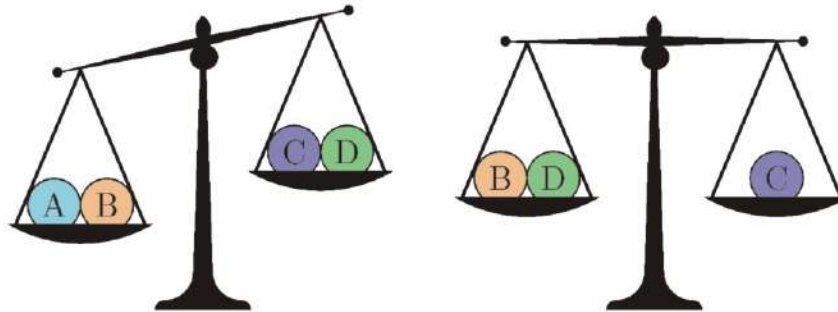
Through which door does he leave the house?

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

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18. Four balls each weigh 10, 20, 30 and 40. Which ball weighs 30?

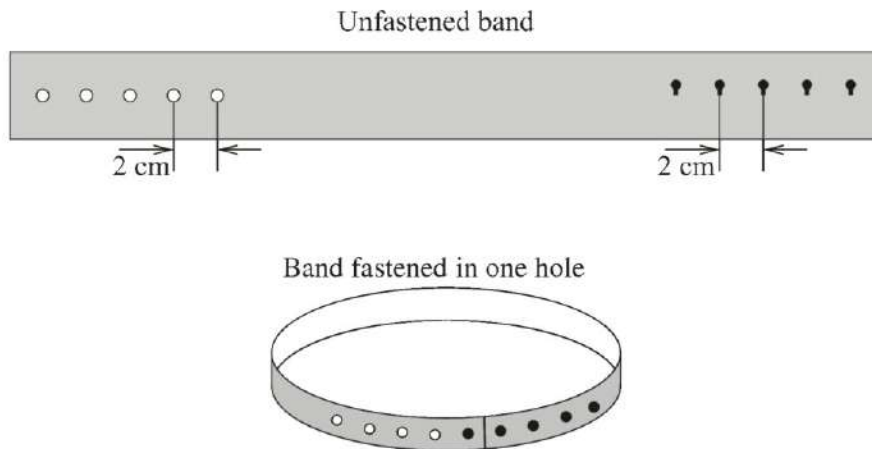


(A) A  
(D) D

(B) B  
(E) cannot be determined

(C) C

19. The band shown in the drawing can be fastened in five ways. How much longer is the band fastened in one hole than the band fastened in all five holes?








(A) 4 cm  
(D) 16 cm

(B) 8 cm  
(E) 20 cm

(C) 10 cm

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20. In an ancient language the symbols      represent the following numbers 1, 2, 3, 4, and 5.

Nobody knows which symbol represents which number.

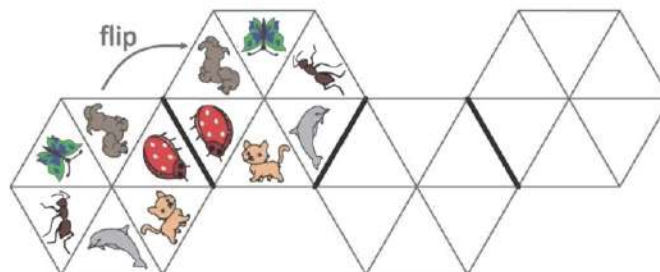
We know that:




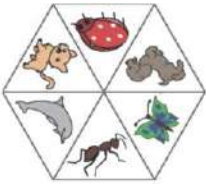

$$\text{atom} + \text{atom} = \text{fish} \quad \text{sun} + \text{sun} = \text{atom} \quad \text{sun} + \text{fish} = \text{hand}$$

Which symbol represents the number 3?

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

21. The colourful glass tile is flipped. One of the flips is shown. What does the glass tile look like at the far right?



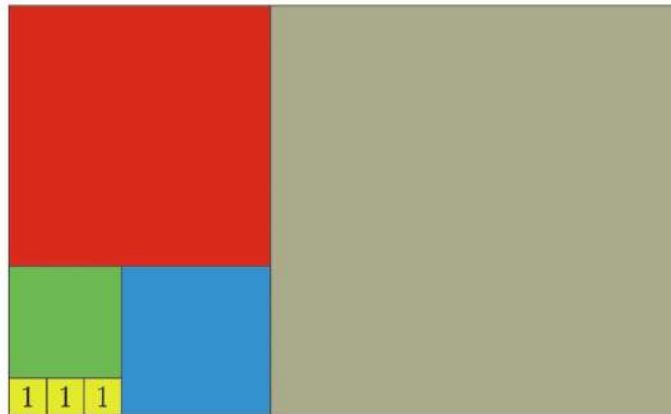
- (A) 
- (B) 
- (C) 
- (D) 
- (E) 



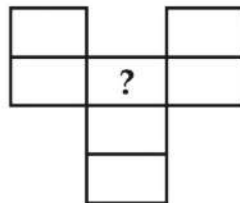
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22. The large rectangle is made up of a number of squares of various sizes. The 3 small squares each have an area of 1. What is the area of the large rectangle?



- (A) 165                                      (B) 176                                      (C) 187  
 (D) 198                                      (E) 200
23. Loes wants to write the numbers from 1 to 7 in the grid shown. Two consecutive numbers cannot be written in two neighbouring cells. Neighbouring cells meet at the edge or at a corner. What numbers can she write in the cell marked with a question mark?



- (A) all seven numbers                                      (B) only odd numbers  
 (C) only even numbers                                      (D) only number 4  
 (E) only the numbers 1 or 7

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24. To defeat a dragon Mathias has to cut off all the dragon's heads. If he can cut off 3 dragon's heads, one new head immediately grows. Mathias defeats the dragon by cutting off 13 heads in total. How many heads did the dragon have at the beginning?

(A) 8

(B) 9

(C) 10

(D) 11

(E) 12

