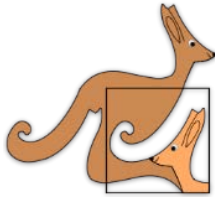


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INTERNATIONAL CONTEST-GAME MATH KANGAROO CANADA, 2018

INSTRUCTIONS GRADE 3-4



1. You have 60 minutes to solve 24 multiple choice problems. For each problem, circle only one of the proposed five choices. If you circle more than one choice, your response will be marked as wrong.
2. Record your answers in the response form. Remember that this is the only sheet that is marked, so make sure you have all your answers transferred to the response form before giving it back to the contest supervisor.
3. The problems are arranged in three groups. A correct answer of the first 8 problems is worth 3 points. A correct answer of the problems 9-16 is worth 4 points. A correct answer of the problems 17-24 is worth 5 points. For each incorrect answer, one point is deducted from your score. Each unanswered question is worth 0 points. To avoid negative scores, you start from 24 points. The maximum score possible is 120.
4. The use of external material or aid of any kind is **not permitted**.
5. The figures *are not* drawn to scale. They should be used only for illustration purposes.
6. Remember, you have about 2 to 3 minutes for each problem; hence, if a problem appears to be too difficult, save it for later and move on to another problem.
7. At the end of the allotted time, please **give the response form to the contest supervisor**.
8. Do not forget to pick up your Certificate of Participation on your way out!

Good luck!

Canadian Math Kangaroo Contest team



Canadian Math Kangaroo Contest

Part A: Each correct answer is worth 3 points

1. Lea has 10 rubber stamps. Each stamp has one of the digits:

0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

She prints the date of St. Patrick's Day 2018:



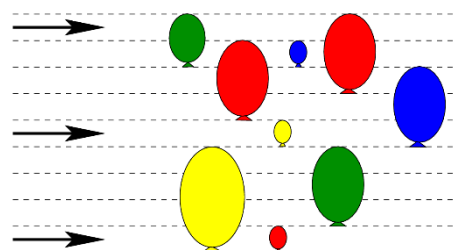
How many different stamps does she use?

- (A) 5 (B) 6 (C) 7 (D) 9 (E) 10

2. The picture shows three flying arrows and nine 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




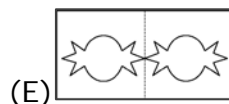
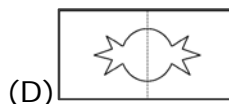
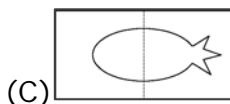
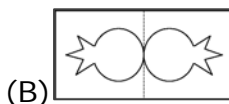
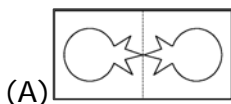
3. Susan is six years old. Her sister is one year younger, and her brother is one year older. What is the sum of the ages of the three siblings?

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

4. Here is a picture of Sophie the ladybug . She turns around. Which picture of the ladybugs below is **not** Sophie?



5. 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?



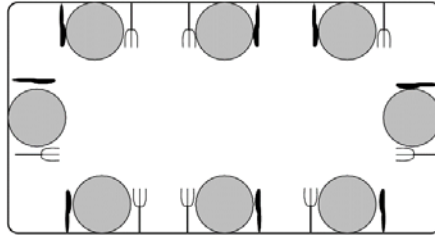
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6. A table is set for 8 people.

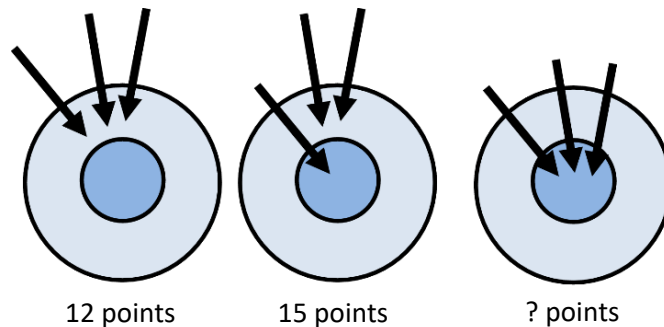


How many settings have the fork to the left of the plate and the knife to the right of the plate?

- (A) 5 (B) 4 (C) 6 (D) 2 (E) 3
7. Emily added two 2-digit numbers correctly on paper. Then she painted out two cells, as shown below.

What is the sum of two digits in the painted cells?

- (A) 5 (B) 7 (C) 8 (D) 9 (E) 13
8. 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?

Part B: Each correct answer is worth 4 points

9. How many different numbers greater than 12 and smaller than 58 with distinct digits can we make by using any two of the digits 0, 1, 2, 5, and 8?
- (A) 3 (B) 5 (C) 7 (D) 8 (E) 9

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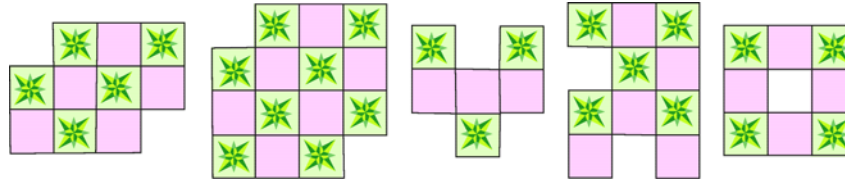


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10. Roberto makes designs using tiles like this

How many of the following five designs can he make?



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

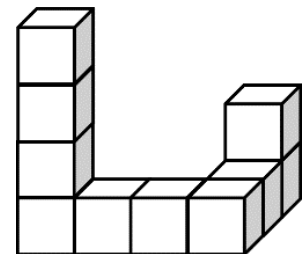
11. Each of these five figures , , , , , appears exactly once in every column and every row of the given table.

			?	

Which figure must we put in the cell with the question mark?

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

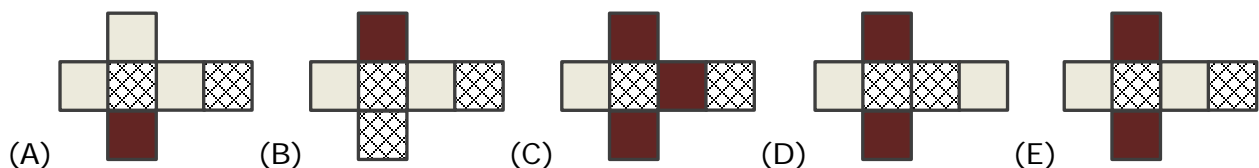
12. Toby glues 10 cubes together to make the structure shown. He paints the whole structure, even the bottom.



How many cubes are painted on exactly four of their faces?

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

13. The opposite faces of a cube are identical, being dark, bright or patterned . Which picture below is the unfolded net of this cube?



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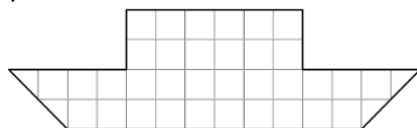
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14. Tom cuts two types of pieces out of grid paper.



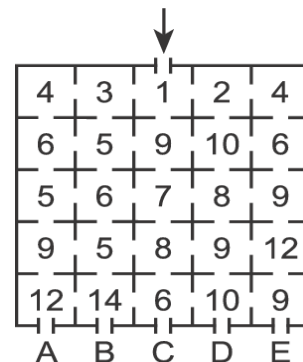
What is the smallest number of pieces identical to the ones shown that Tom needs to build the boat in the picture?



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

15. 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



16. Peta rabbit had 20 carrots. She ate two carrots every day. She ate the twelfth carrot on Wednesday. On which day did she start eating the carrots?

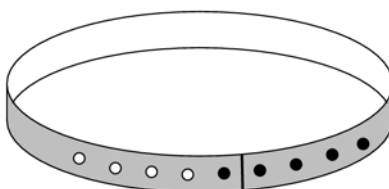
- (A) Monday (B) Tuesday (C) Wednesday (D) Thursday (E) Friday

Part C: Each correct answer is worth 5 points

17. The belt shown in the drawing can be fastened in five ways.



How much longer is the belt fastened in one hole than the belt fastened in all five holes?








- (A) 4 cm (B) 8 cm (C) 10 cm (D) 16 cm (E) 20 cm

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18. In an ancient writing the symbols      represent the numbers 1, 2, 3, 4, and 5. Nobody knows which symbol represents which number. We know that

$$\text{atom} + \text{atom} = \text{fish}$$

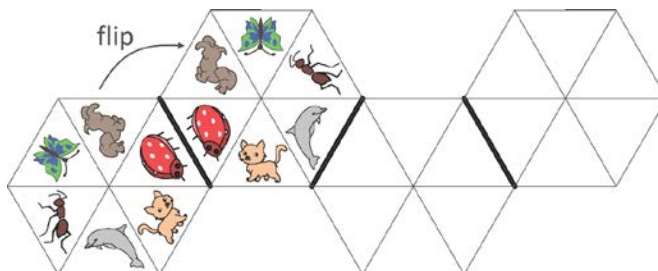
$$\text{sun} + \text{sun} = \text{atom}$$

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


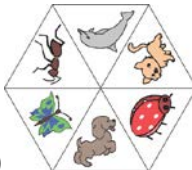
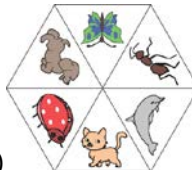
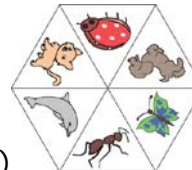

Which symbol represents the number 3?

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

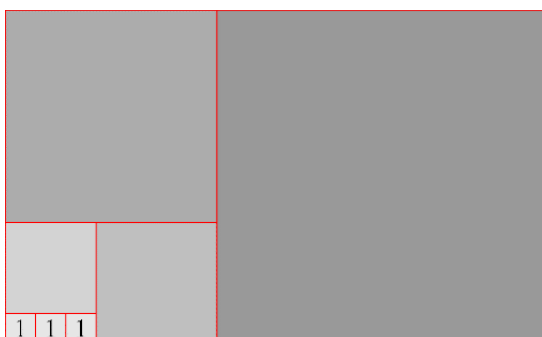
19. A stained-glass tile is flipped along the black line. The figure shows the tile after the first flip.



What will the stained-glass tile look like after the third flip (at the far right)?

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

20. The large rectangle is made up of squares of varied sizes. The three smallest squares each have an area of 1, as shown.



What is the area of the largest square?

- (A) 81 (B) 100 (C) 110 (D) 121 (E) 144

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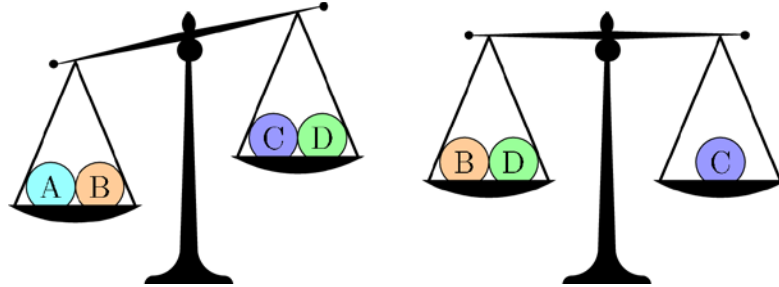
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21. Five ducklings walk behind the mother duck in a row from the oldest to the youngest like this: Dina and Becca walk right one after the other, Mingo walks behind Lisa but in front of Becca, Becca walks directly in front of Pip. What is the name of the youngest duckling?

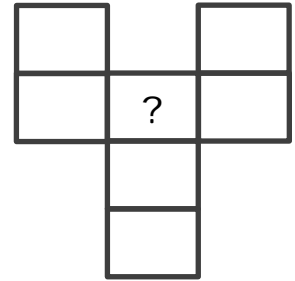
(A) Dina (B) Pip (C) Becca (D) Lisa (E) Mingo

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



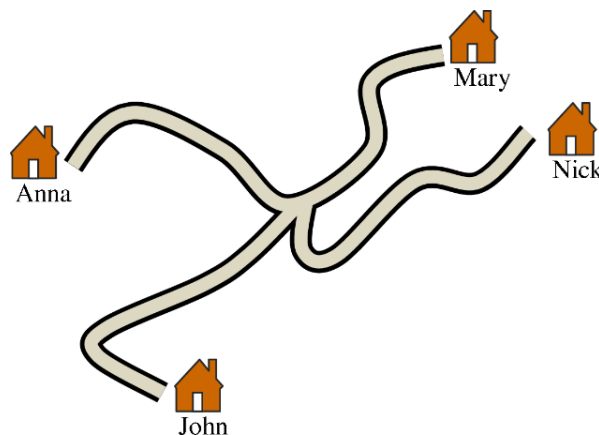
(A) A (B) B (C) C (D) D (E) it could be A or B

23. Lois 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

24. The distance from Anna's to Mary's house is 16 kilometers along the shown road. The distance from Mary's to Nick's house is 20 kilometers. The distance from Nick's to John's house is 19 kilometers.



How far is Anna's house from John's?

(A) 15 (B) 16 (C) 18 (D) 19 (E) 20