

Level Ecolier (Class 3 & 4)

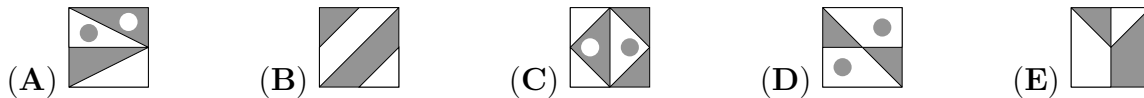
Time Allowed : 2 hours

SECTION ONE - (3 points problems)

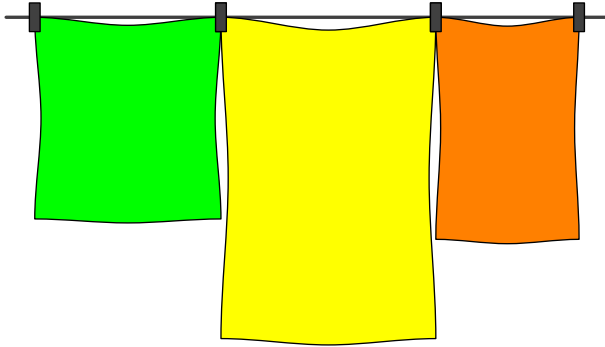
1. Basil wants to write the word MATHEMATICS on a sheet of paper. He wants different letters to be coloured differently, and the same letters to be coloured identically. How many colours will he need?

- (A) 7 (B) 8 (C) 9 (D) 10 (E) 13

2. In four of the five pictures the white area is equal to the grey area. In which picture are the white area and the grey area different?



3. Father hangs the laundry outside on a clothesline. He wants to use as few pegs as possible. For 3 towels he needs 4 pegs, as shown. How many pegs does he need for 9 towels?



- (A) 8 (B) 10 (C) 12 (D) 14 (E) 16

4. Iljo colours the squares A2, B1, B2, B3, B4, C3, D3 and D4. Which coloring does he get?

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

Which coloring

- (A)

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

 (B)

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

 (C)

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

 (D)

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

 (E)

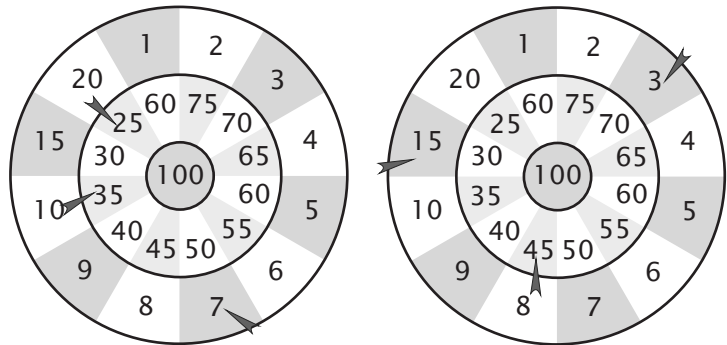
| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

5. 13 children are playing hide and seek. One of them is the "seeker" and the others hide. After a while 9 children have been found. How many children are still hiding?

- (A) 3 (B) 4 (C) 5 (D) 9 (E) 22

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6. Mike and Jake were playing darts. Each one threw three darts (see the picture). Who won



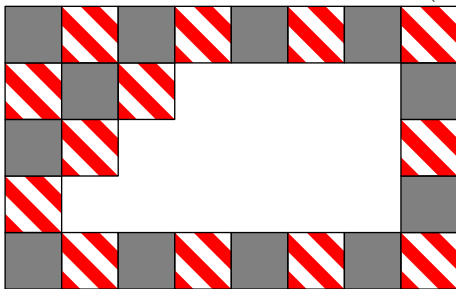
Mike

Jake

and how many more points did he score?

- (A) Mike, he scored 3 points more.
- (B) Jake, he scored 4 points more.
- (C) Mike, he scored 2 points more.
- (D) Jake, he scored 2 points more.
- (E) Mike, he scored 4 points more.

7. A regular rectangular pattern on a wall was created with 2 kinds of tiles: grey and striped. Some tiles have fallen off the wall (see the picture). How many grey tiles have fallen off?

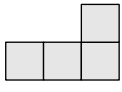


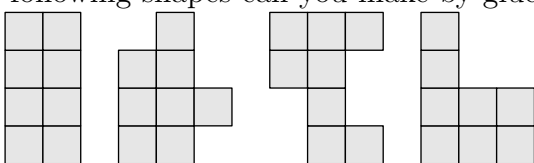
- (A) 9
- (B) 8
- (C) 7
- (D) 6
- (E) 5

8. The year 2012 is a leap year, that means there are 29 days in February. Today, on the 15th March 2012, the ducklings of my grandfather are 20 days old. When did they hatch from their eggs?

- (A) on 19th of February
- (B) on 21th of February
- (C) on 23rd of February
- (D) on 24th of February
- (E) on 26th of February

SECTION TWO - (4 points problems)

9. You have L-shaped tiles, each consisting of 4 squares as shown: . How many of the following shapes can you make by glueing together two of these tiles?



- (A) 0
- (B) 1
- (C) 2
- (D) 3
- (E) 4

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10. Three balloons cost 12 cents more than one balloon. How much does one balloon cost?

- (A) 4 (B) 6 (C) 8 (D) 10 (E) 12

11. Grandmother made 20 gingerbread biscuits for her grandchildren. She decorated them with raisins and nuts. First she decorated 15 cakes with raisins and then 15 cakes with nuts. At least how many cakes were decorated both with raisins and nuts?

- (A) 4 (B) 5 (C) 6 (D) 8 (E) 10

12. In a sudoku the numbers 1, 2, 3, 4 can occur only once in each column and in each row. In the mathematical sudoku below Patrick first writes in the results of the calculations. Then he completes the sudoku.

| | | | |
|--------------|---------|--------------|---------|
| 1×1 | | 1×3 | |
| 2×2 | $6 - 3$ | | $6 - 5$ |
| $4 - 1$ | $1 + 3$ | $8 - 7$ | |
| $9 - 7$ | $2 - 1$ | | |

Which number will Patrick put in the grey cell?

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

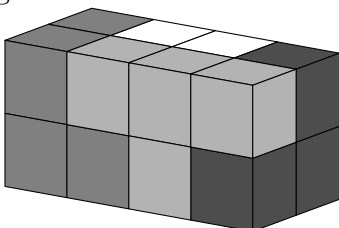
13. Among Nikolay's classmates there are twice as many girls as boys. Which of the following numbers can be equal to the number of all children in this class?

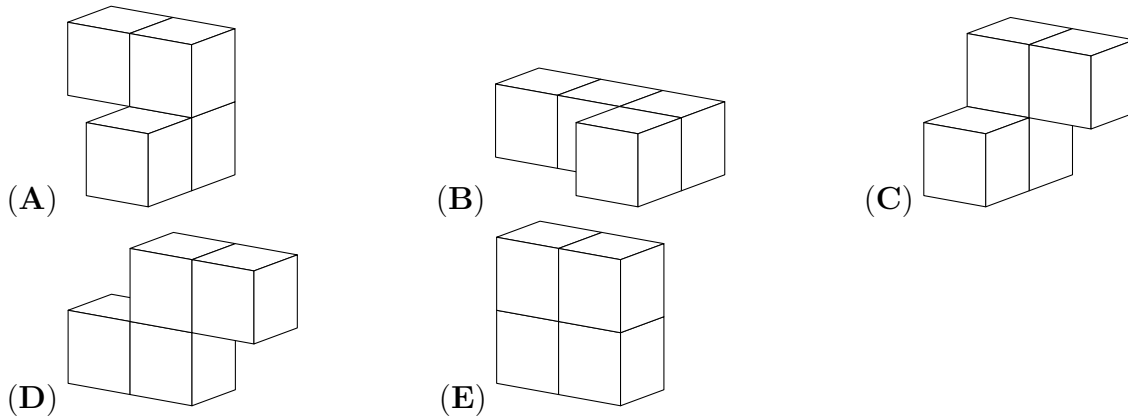
- (A) 30 (B) 20 (C) 24 (D) 25 (E) 29

14. In the animal's school, 3 kittens, 4 ducklings, 2 goslings and several lambs are taking lessons. The teacher owl found out that all of her pupils have 44 legs altogether. How many lambs are among them?

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

15. A cuboid is made of four pieces, as shown. Each piece consists of four cubes and is a single colour. What is the shape of the white piece?



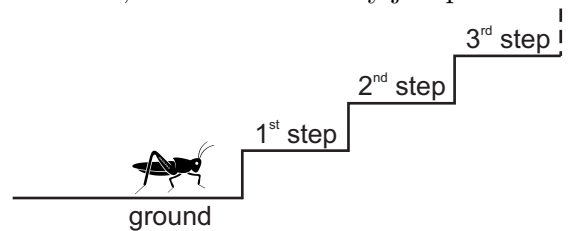


16. At a Christmas party there was exactly one candlestick on each of the 15 tables. There were 6 five-branched candlesticks, the rest of them were three-branched ones. How many candles had to be bought for all the candlesticks?

- (A) 45 (B) 50 (C) 57 (D) 60 (E) 75

SECTION THREE - (5 points problems)

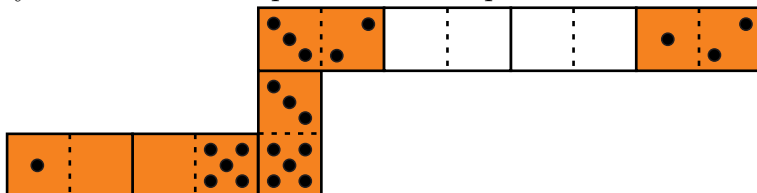
17. A grasshopper wants to climb a staircase with many steps. She makes only two different jumps: 3 steps up or 4 steps down. Beginning at the ground level, at least how many jumps will



she have to make in order to take a rest on the 22th step?

- (A) 7 (B) 9 (C) 10 (D) 12 (E) 15

18. Frank made a domino snake of seven tiles. He put the tiles next to each other so that the sides with the same number of dots were touching. Originally the snake had 33 dots on its back. However, his brother George took away two tiles from the snake (see the picture). How many dots were in the place with the question mark?



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

19. Gregor forms two numbers with the digits 1, 2, 3, 4, 5 and 6. Both numbers have three digits, each digit is used only once. He adds these two numbers. What is the greatest sum

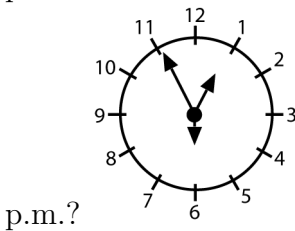
Gregor can get?

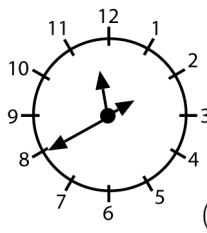
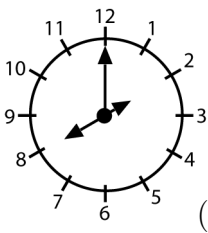
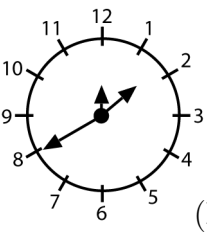
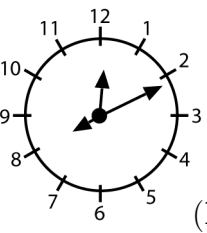
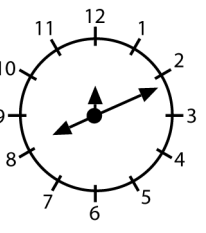
- (A) 975 (B) 999 (C) 1083 (D) 1173 (E) 1221

20. Laura, Iggy, Val and Kate want to be in one photo together. Kate and Laura are best friends and they want to stand next to each other. Iggy wants to stand next to Laura because he likes her. In how many possible ways can they arrange for the photo?

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

21. A special clock has 3 hands of different length (for hours, for minutes, and for seconds). We do not know which hand is which, but we know that the clock runs correctly. At 12:55:30 p.m. the hands were in position depicted on the right. How will this clock look like at 8:11:00



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

22. Michael chose some positive number, multiplied it by itself, added 1, multiplied the result by 10, added 3, and multiplied the result by 4. His final answer was 2012. What number did Michael choose?

- (A) 11 (B) 9 (C) 8 (D) 7 (E) 5

23. A rectangular paper sheet measures 192×84 mm. You cut the sheet along just one straight line to get two parts, one of which is a square. Then you do the same with the non-square part of the sheet, and so on. What is the length of the side of the smallest square you can get with this procedure?

- (A) 1 mm (B) 4 mm (C) 6 mm (D) 10 mm (E) 12 mm

24. In a soccer game the winner gains 3 points, while the loser gains 0 points. If the game is a draw, then the two teams gain 1 point each. A team has played 38 games gaining 80 points. Find the greatest possible number of games that the team lost.

- (A) 12 (B) 11 (C) 10 (D) 9 (E) 8