SECTION A : 15 QUESTIONS (+4, 0)
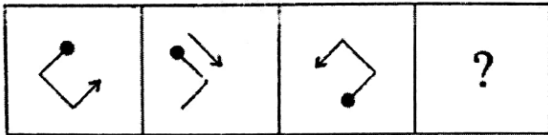
In this section, only one option is correct and correct answer will fetch +4 marks, NO answer or wrong answer will fetch zero marks.

1. Find value of $\dfrac{0.87^3 - 0.1^3}{0.87^2 + 0.087 + 0.1^2}$

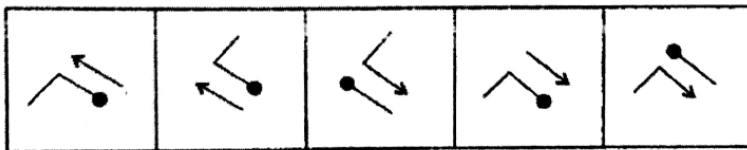   (A) 1.07   (B) 0.93   (C) 0.68   (D) 0.77

2. The average height of 3 children is 95 cms. If the heights of 2 children are 97 and 92 respectively, find the height of 3rd child?

   (A) 92 cms   (B) 93 cms   (C) 95 cms   (D) 96 cms

3. Two friends are chatting:

   Thomas: Peter, how old are your children?

   Peter: Well Thomas, there are three of them and the product of their ages is 36.

   Thomas: That is not enough.

   Peter: The sum of their ages is exactly the no. of pizza we ate today.

   Thomas: That is still no enough.

   Peter: The last thing is that my oldest child wears a green cap.

   Thomas: I got it.

   So, How old do you think is age of Peter's eldest child?

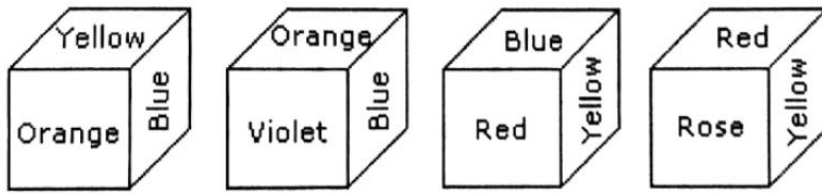   (A) 2   (B) 9   (C) 11   (D) None of these

4. Problem figure :

   Answer figure :

   (A) A   (B) B   (C) C   (D) D

SPACE FOR ROUGH WORK

5. From the four positions of dice given below, find the colour which is opposite to yellow?

    (A) Violet   (B) Red   (C) Rose   (D) Blue

6. There are 44 boys and 32 girls in a class. These students are arranged in rows for a prayer in such a way that each row consists of only either boys or girls and every row contains an equal number of students. Minimum number of rows such that equal number of students can be arranged is

    (A) 4   (B) 12   (C) 15   (D) 19

7. If $f(x) = x^2 + 6x + a$, $g(x) = x^2 + 4x + b$, $h(x) = x^2 + 14x + c$ and L.C.M. of $f(x), g(x), h(x)$ is $(x+8)(x-2)(x+6)$ then $a+b+c$ is

    (A) 20   (B) 16   (C) 32   (D) 10

8. Value of $\left(1+\dfrac{1}{2}\right)\left(1+\dfrac{1}{4}\right)\left(1+\dfrac{1}{16}\right)\left(1+\dfrac{1}{256}\right).....\infty$ is

    (A) 1   (B) 2   (C) $\dfrac{1}{2}$ (D) $\dfrac{1}{4}$

9. If $a^2 + b^2 - 4a + 2b + 5 = 0 \, (a, b \in R)$, then

    (A) $a^2 + b^2 = 3a + b$ (B) $a^2 + b^2 = a - 2b$

    (C) $a^2 + b^2 = 4a$ (D) None

10. A person can row 28 km downstream and 12 km upstream in 5 hours. He can row 21 km downstream and 10 km upstream in 4 hours. Find the speed of person in still water (in kmph)

    (A) 9   (B) 8   (C) 6   (D) 5

11. Madhuri purchased cakes of two varieties of soap, Lux and Dove, spending a total Rs. 360. If each Lux costs 30 Rs. and Dove costs 40 Rs., then in how many different combinations could she have purchased the cakes?

    (A) 3   (B) 4   (C) 5   (D) 2

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12. When $f(x) = 4x^3 - 12x^2 + 14x - 3$ is divided by $g(x) = x - \dfrac{1}{2}$, then the remainder is

(A) $\dfrac{1}{2}$ (B) $\dfrac{3}{2}$ (C) 3   (D) None

13. If the mid-points of the sides of a triangle be $(-2, 3), (4, -3)\ \&\ (4, 5)$, then centroid of triangle is

(A) $\left(\dfrac{5}{3}, 2\right)$ (B) $\left(\dfrac{5}{6}, 1\right)$ (C) $\left(1, \dfrac{5}{6}\right)$ (D) $\left(2, \dfrac{5}{3}\right)$

14. Square root of $(4a + 5b + 5c)^2 - (5a + 4b + 4c)^2 + 9a^2$

(A) $\sqrt{3}(b+c)$ (B) $3(b+c-a)$ (C) $3(b+c)$ (D) $3(b+c-a)$

15. Which combination of letters completes the given series?
NRJ, PNP, RJV, ?
(A) BFT   (B) TFB   (C) TBF   (D) BTF
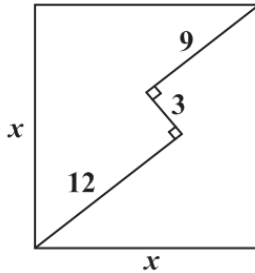
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SECTION B : 2 QUESTIONS (+5, -1)

In this section, correct answer will fetch +5 marks, if not answered then zero marks while wrong answer will fetch a PENALTY of 1 marks.
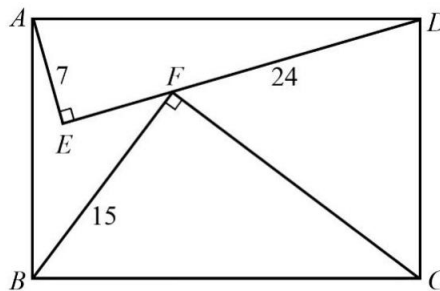
How to mark your Answer for this section

Right Method	Wrong Method	Right Method	Wrong Method
4502	4502	450.2	450.2

16. What is x, the length of the square's side?

17. Inside rectangle ABCD, there are the right triangles AED and BFC, as shown in the picture. Note that point F is located along DE.

If AE = 7, DE = 24 and BF = 15, what is the length of 3AB?

SPACE FOR ROUGH WORK