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Maths Questions for CLAT Exam.

CLAT Maths Quiz 1

Directions: Kindly study the following Questions carefully and choose the right answer:

1. Find a number such that when 15 is subtracted from 7 times the number, the result is 10 more than twice the number.

- A. 5 B. 10 C. 15 D. 20

2. The income of A is 150% of the income of B and the income of C is 120% of the income of A. If the total income of A, B and C together is Rs. 86000, what is C's income?

- A. Rs. 30000 B. Rs. 32000 C. Rs. 36000 D. Rs. 20000

3. A train 150 m long passes a pole in 15 seconds and crosses another train of the same length travelling in opposite direction in 8 seconds. The speed of the second train in (km/h) is

- A. 60 km/hr B. 66 km/hr C. 72 km/hr D. 99 km/hr

4. A shopkeeper deals in milk and 45 litre mixture is to be distributed in Milk & Water in the ratio of 4 : 1. If 4 litre milk & 3 litre water will be added in the mixture then what will be the new ratio of water and milk?

- A. 5 : 6 B. 3 : 10 C. 4 : 5 D. 7 : 8

5. In a box there are 10 apples and $\frac{2}{5}$ th of the apples are rotten. If three apples are taken out from the box, what will be the probability that at least one apple is rotten.

- A. $\frac{3}{4}$ B. $\frac{5}{6}$ C. $\frac{9}{10}$ D. $\frac{8}{13}$

6. 6 women can complete a piece of work in 10 days, whereas 10 children alone take 15 days to complete the same piece of work. How many days will 6 women and 10 children together take to complete the piece of work?

- A. 7 B. 8 C. 6 D. 4

7. A boat takes 19 hours for travelling downstream from point A to Point B and coming back to a Point C midway between A and B. If the velocity of the stream is 4 kmph and the speed of the boat in still water is 12 kmph, what is the distance between A and B?

- A. 160 km B. 152 km C. 200 km D. 220 km

8. Meetal and Neeraj got married 30 years ago. Meetal is 4 years younger than Neeraj. When they got married the difference between 2 times of the Meetal's age and 1.5 times of the Neeraj's age was 5 years. Find the present age of Meetal and Neeraj.

A. 42, 46

B. 48, 52

C. 55, 59

D. None of these

9. A sold an article with 10% loss on the cost price. He bought the article at a discount of 20% on the labelled price. What would have been the percentage loss had he bought it at the labelled price?

A. 34%

B. 18%

C. Data inadequate

D. 28%

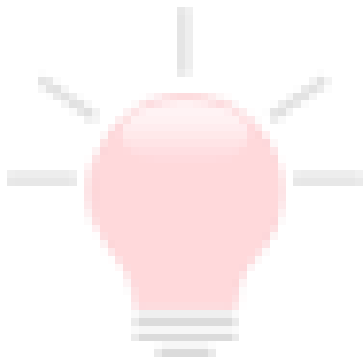
10. What is $\frac{(x^2 + y^2)(x - y) - (x - y)^3}{x^2y - xy^2}$ equal to?

A. 1

B. 2

C. 4

D. - 2



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Correct Answers:

1	2	3	4	5	6	7	8	9	10
B	B	A	A	B	B	D	D	C	A

Explanations:

1. Let, the number be z , Then, $7z - 15 = 2z + 10$

$$\Rightarrow 5z = 25 \Leftrightarrow z = 5.$$

Hence, the required number is 5.

Hence, option A is correct.

2. Let's take B's income as Rs. 100, then

$$A : B : C = 150 : 100 : \frac{120 \times 150}{100}$$

$$= 15 : 10 : 18$$

$$\therefore \text{C's share} = \frac{18}{43} \times 86000 = \text{Rs. } 36000$$

Hence, option C is correct.

3.

$$\text{Speed of the first train} = \frac{150}{15} = 10 \text{ m/sec}$$

Let the speed of the second train be x m/sec

Relative speed = $(10 + x)$ m/sec

Length of train 1 + length of train 2 = $150 + 150 = 300$ mtr

$$\text{In the second scenario equation will be like } \frac{300}{10 + x} = 8$$

$$\text{or, } 300 = 80 + 8x$$

$$\text{or, } x = \frac{220}{8} = \frac{55}{2} \text{ m/sec}$$

$$\therefore \text{Speed of the second train} = \frac{55}{2} \times \frac{18}{5} = 99 \text{ km/hr}$$

Hence, option D is correct.

4. In the mixture of 45 litre,

$$\text{Milk} = \frac{45}{5} \times 4 = 36 \text{ litre, Water} = \frac{45}{5} \times 1 = 9 \text{ litre}$$

$$\text{New ratio} = 9 + 3 : 36 + 4 = 12 : 40 = 3 : 10$$

Hence, option B is correct.

5.

$$\text{Let rotten apples} = 10 \times \frac{2}{5} = 4, \text{ others} = 6$$

$$\text{If 1 apple is rotten + 2 apples are other} = {}^4C_1 \times {}^6C_2 = 60$$

$$\text{If 2 apples are rotten + 1 apple is other} = {}^4C_2 \times {}^6C_1 = 36$$

$$\text{If 3 apples are rotten} = {}^4C_3 = 4$$

$$\text{Total outcomes} = {}^{10}C_3 = 120$$

$$\text{Probability} = \frac{60 + 36 + 4}{120}$$

$$= \frac{100}{120} = \frac{5}{6}$$

Hence, option B is correct.

6.

$$6 \text{ Women's 1 day's work} = \frac{1}{10};$$

$$10 \text{ Children's 1 day's work} = \frac{1}{15};$$

(6 women + 10 children)'s 1 day's work

$$= \left(\frac{1}{10} + \frac{1}{15} \right) = \frac{5}{30} = \frac{1}{6}.$$

$\therefore$ 6 women and 10 children will complete the work in 6 days.

Hence, option C is correct.

7. Speed downstream = $(12 + 4)$ km/hr = 16 km/hr;

Speed upstream = $(12 - 4)$ km/hr = 8 km/hr.

Let the distance between A and B be x km, Then,

$$\frac{x}{16} + \frac{(x/2)}{8} = 19 \Leftrightarrow \frac{x}{16} + \frac{x}{16} = 19$$

$$\Leftrightarrow \frac{2x}{16} = 19 \Leftrightarrow x = 152 \text{ km.}$$

Hence, option B is correct.

8. Before 30 years, Neeraj's age = x years, Meetal's age = $x - 4$ years

According to the question,

$$2(x - 4) - 1.5x = 5$$

$$2x - 8 - 1.5x = 5$$

$$0.5x = 5 + 8$$

$$0.5x = 13$$

$$x = 26$$

$$\text{Meetal's present age} = 26 - 4 + 30 = 52$$

$$\text{Neeraj's present age} = 26 + 30 = 56$$

Hence, option D is correct.

9. Let the CP to 'A' = 100

After allowing a discount of 10% the SP will be = 90

As per the question,

'A' bought the article at 20% discount on Labelled Price. Therefore, the eq. will become like

$$\Rightarrow \frac{80}{100} \text{ of Labelled price} = 100 \Rightarrow \therefore \text{Labeled Price} = 125$$

$$\text{Now, loss in value if the item was bought at LP} = \text{LP} - \text{SP} = 125 - 90 = 35/-$$

$$\text{Loss \%} = \frac{35}{125} \times 100 = 28\%.$$

Hence, option D is correct.

10.

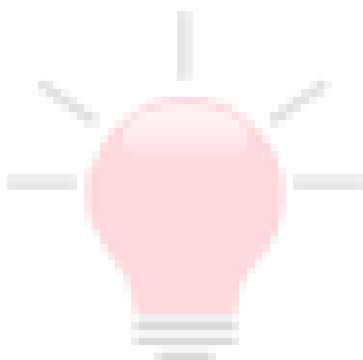
$$\frac{(x^2 + y^2)(x - y) - (x - y)^3}{x^2y - xy^2}$$

$$= \frac{(x^3 + xy^2 - x^2y - y^3) - (x^3 - y^3 - 3x^2y + 3xy^2)}{x^2y - xy^2}$$

$$= \frac{(x^3 + xy^2 - x^2y - y^3 - x^3 + y^3 + 3x^2y - 3xy^2)}{x^2y - xy^2}$$

$$= \frac{2x^2y - 2xy^2}{x^2y - xy^2} = \frac{2(x^2y - 2xy^2)}{x^2y - xy^2} = 2$$

Hence, option B is correct.



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