# Maths Questions for CLAT Exam.

## CLAT Maths Quiz 32

**Directions: Read the following Questions carefully and choose the right answer:**

**1. Find the selling price of an article of a shopkeeper allows two successive discounts of 5% each on the marked price of Rs. 80.**

A. 72.20 B. 76.80 C. 80.20 D. 68.70

**2. In how many years will be simple interest on a sum of money be equal to the principal at the rate of 16.66% per annum?**

A. 2 years B. 4 years C. 6 years D. 8 years

**3. If 3 times a number exceeds its 3/5 by 60, then what is the number?**

A. 25 B. 40 C. 35 D. 32

**4. Average marks obtained by 8 students in an examination was 51 and by 9 other students was 68. Average marks of all 17 students was:**

A. 20 B. 35 C. 50 D. 60

**5. A can do a piece of work in 12 days and B in 15 days. They work together for 5 days and then B left. The days taken by A to finish the remaining work is**

A. 3 B. 4 C. 2 D. 1

**6. The principal, which will amount to Rs. 270.40 in 2 years at the rate of 4% per annum compounded interest is**

A. Rs. 200 B. Rs. 225 C. Rs. 250 D. Rs. 220

**7. Out of 8 blue and 4 yellow balls, 5 blue and 2 yellow balls can be drawn in how many different ways?**

A. $^{12}C_7$ B. 336 C. $^{10}C_5 \times {}^{8}C_4$ D. $^{9}C_5 \times {}^{6}C_4$

**8. Pawan Express is a 300-meter long train which moves at an average speed of 100 km/hr and crosses a platform in 27 seconds. A man crosses the same platform in 5 minutes. What is the speed of man in meter/second?**

A. 2 B. 2.4 C. 1.6 D. 1.5

**9. Present age of Rahul is 8 years less than Ritu's present age. If 3 years ago Ritu's age was x, which of the following represents Rahul's present age?**

A. x + 3 B. x – 5 C. x – 3 + 8 D. x + 3 + 8

**10. A candle in the shape of a cylinder which has a base radius of 12 cm and is 4 cm long. By how many centimeters can the length be increased so that when the radius is increased by the same amount, the mass of the candle increases equally?**

A. 8 B. 10 C. 12 D. 15

**Correct Answers:**

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

## Explanations:

**1.** We can find the net discount applying the net percent effect formula,

$$\text{Net \% change} = a + b + \frac{ab}{100}$$

Two successive discounts of 5% are there, therefore w

$$\Rightarrow -5 - 5 + \frac{5 \times 5}{100}$$

$$\Rightarrow -10 + \frac{1}{4}$$

$$\Rightarrow \frac{-40 + 1}{4} = \frac{-39}{4}\%$$

So, $\frac{-39}{4}\%$ of 80

$$\Rightarrow \frac{-39}{100 \times 4} \times 80$$

Total discount = – 7.8%

So,

S.P. = 80 – 7.8 = 72.2

Hence, option A is correct.

**2.** Let the principal be x
we need SI to become equal to principal = x.

$$SI = \frac{P \times R \times T}{100}$$

Given $R = 16\frac{2}{3} = \frac{50}{3}\%$

$$so,\ x = \frac{x \times \frac{50}{3} \times T}{100}$$

$$100\ x = x \times \frac{50}{3} \times T$$

T = 6 years

Hence, option C is correct.

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**3.** Let the required number be x.

$$3x - \frac{3x}{5} = 60$$

$$\Rightarrow \frac{12x}{5} = 60$$

$$12x = 60 \times 5$$

$$x = 5 \times 5 = 25$$

Hence, option A is correct.



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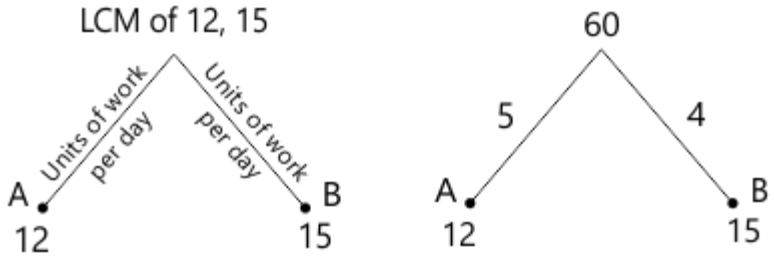
**4.** Average marks of 8 students = 51
so, total marks of 8 students = 51 × 8 = 408
Now, Average of students = 68
Total of the marks obtained by 9 students = 68 × 9 = 612
Sum of marks obtained by all 17 students together = 612 + 408 = 1020

$$\text{Avg. of 17 students} = \frac{1020}{17} = 60$$

Hence, option D is correct.

**5.** **Approach 1:**




LCM of 12 & 15

| | |
|---|---|
| 2 | 12, 15 |
| 2 | 6, 15 |
| 3 | 3, 15 |
| 5 | 1, 5 |
| | 1, 1 |

= 2 × 2 × 3 × 5 = 60

So, A does 5 units of work daily and B does 4 units daily.

They work together for 5 days.
1 day's work done together = 5 + 4 = 9 units
Therefore, 5 days' work = 9 × 5 = 45 units
Left work = 60 – 45 = 15 units

Now, A has to do it alone. And since he does 5 units daily he will take 3 more days to finish the remaining 15 units of work

Hence, option A is correct.

**Approach 2:**
Let A takes x more days to complete the work.
Efficiency equation as per the question will be as follows:
A's (5 + x) days work + B's 5 days work = 1

$\frac{5+x}{12} + \frac{5}{15} = 1$

$\frac{5+x}{12} = \frac{1-1}{3} = \frac{2}{3}$

5 + x = 8
Therefore x = 3 days
Option A is hence the correct answer.

**6.** Let the principal be Rs. P.

$\therefore 270.40 = P\left(1 + \frac{4}{100}\right)^2$

$270.40 = P\,(1 + 0.04)^2$

$P = \frac{270.40}{1.04 \times 1.04} = \text{Rs. } 250$

Hence, option C is correct.

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**7.** Possible no. of combinations while drawing five blue balls out of 8 = ${}^8C_5$

Possible no. of combinations while drawing two yellow balls out of 4 = ${}^4C_2$

Therefore, possible no. of combinations while drawing 5 blue **and** 2 yellow balls together = ${}^8C_5 \times {}^4C_2$ = 56 x 6 = 336

Option B is hence the correct answer.

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**8.** Let the length of the platform be 'x' meters.

Speed of train = 100 km/hr = $100 \times \frac{5}{18} = \frac{250}{9}$ meter/second

Now, while crossing 300 m long platform, the train takes 27 seconds. Therefore

Distance travelled = 300 + x = Speed x Time taken = $(250/9) \times 27 \Rightarrow x = 750 - 300 = 450$ m

$\therefore$ Reqd. speed of man = $\frac{450}{5 \times 60} = 1.5$ meter/second

Hence, option (D) is correct.

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**9.** As per question,

Ritu's age 3 years ago = 3 years

Present age of Ritu = (x + 3) years

Present age of Rahul = (x + 3) – 8

= (x – 5) years

Hence, option (B) is correct.

**10.** Let the needed number be x cm.

Mass = Density * Volume

As the mass of the candle is directly proportional to the volume of the candle (if density is constant)

$\Rightarrow \pi \times (12 + x)^2 \times 4 = \pi \times 12^2 \times (4 + x)$

$\Rightarrow (144 + x^2 + 24x) \times 4 = 144 \times (4 + x)$

$\Rightarrow (144 + x^2 + 24x) = 36 \times (4 + x)$

$\Rightarrow x^2 - 12x = 0$

$\Rightarrow x (x - 12) = 0$

$\Rightarrow x = 12$ cm

Hence, option (C) is correct.

Hence, option C is correct.