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Maths Questions for CLAT Exam.

CLAT Maths Quiz 38

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

1. $27.33 \times \left(\frac{567.33-438.79}{58.67}\right) = ?$

A. 67.13 B. 59.85 C. 58.95 D. 55.98

2. The difference between two numbers is 1365. When larger number is divided by the smaller one, the quotient is 6 and the remainder is 15. The smaller number is

A. 270 B. 250 C. 275 D. 280

3. Of the three numbers, the first is twice t he second and the second is twice the third. The average of the reciprocal of the three numbers is 7/72. The numbers are

A. 7, 8, 22 B. 6, 12, 24 C. 12, 8, 10 D. 25, 6, 9

4. A school has only three classes which accommodate 40, 50 and 60 students respectively. If the pass percentages of these classes are 10%, 20% and 10% respectively, then the percentage of passed students in the school is

A. 12% B. 15% C. $13\frac{1}{3}\%$ D. $12\frac{1}{5}\%$

5. If a certain sum amount to Rs. 108 in 2 years, and Rs. 112 in 3 years, find the principal and simple interest rate.

A. 7% B. 5% C. 6% D. 4%

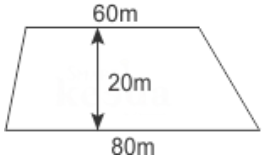
6. If $x = \frac{\sqrt{3}+1}{\sqrt{3}-1}$ **and** $y = \frac{\sqrt{3}-1}{\sqrt{3}+1}$**, then find the value of** $x^2 + y^2$**.**

A. 19 B. 11 C. 14 D. 15

7. Point A is 10 cm from the centre of the circle. The length of the tangent drawn from Point A to the circle is 8 cm. Find the radius of the circle.

A. 2 cm B. 4 cm C. 5 cm D. 6 cm.

8. There is a flower bed in the shape of trapezium. Its parallel sides are 60 m and 80 m respectively. If the distance between parallel sides is 20m, find the area of the flower bed.



A. 1100 m^2 B. 1400 m^2 C. 1350 m^2 D. 1050 m^2

9. In a single throw of a fair die what is the probability that the number on the top is more than 2?

A. $\frac{2}{3}$ B. $\frac{3}{2}$ C. $\frac{5}{3}$ D. $\frac{3}{5}$

10. A man is standing at a distance of 25m from the bottom of the tree, and he finds that the angle of elevation of the top of the tree is 30°, find the height of the tree.

A. $\frac{15}{\sqrt{3}}$ m B. $\frac{25}{\sqrt{3}}$ m C. $\frac{19}{\sqrt{3}}$ m D. 15√3 m

Correct Answers:

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

Explanations:

1.

$27.33 \times (\frac{567.33 - 438.79}{58.67}) = 27.33 \times (\frac{128.54}{58.67})$

$= 27.33 \times 2.19 = 59.85$

Hence, option B is correct.

2. Let the numbers be x and 1365 + x.

Then 1365 + x = 6x + 15 = x = 270

Hence, option A is correct.

3. Let the third number be a.

Then, second number = 2a and first number = 4a

According to the question,

$$\frac{\frac{1}{a} + \frac{1}{2a} + \frac{1}{4a}}{3} = \frac{7}{72}$$

$\Rightarrow \frac{7}{4a} = \frac{7}{24} \Rightarrow 4a = 24$

$\Rightarrow$ a = 6, 2a = 12 and 4a = 24

$\Rightarrow$ The numbers are 6, 12 and 24.

Hence, option B is correct.

4. Total number of students = 40 + 50 + 60 = 150.

Number of students securing pass marks

$= \frac{10}{100} \times 40 + \frac{20}{100} \times 50 + \frac{10}{100} \times 60$

$= 4 + 10 + 6 = 20$

$= \frac{20}{40 + 50 + 60} \times 100 = 13\frac{1}{3}\%$

Hence, option C is correct.

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5. Amount after 2 years = Rs. 108

Amount after 3 years = Rs. 112

The amount of interest is always constant.

Therefore, interest for 1 year = Rs. 4

Hence, principal = 108 – 2 (4) = Rs. 100

Rate of interest $= \frac{4 \times 100}{100 \times 1} = 4\%$

Hence, option D is correct.

6.

As $x = \frac{\sqrt{3} + 1}{\sqrt{3} - 1} \times \frac{\sqrt{3} + 1}{\sqrt{3} + 1} = \frac{3 + 1 + 2\sqrt{3}}{(\sqrt{3})^2 - (1)^2}$

$\Rightarrow x = 2 + \sqrt{3}$

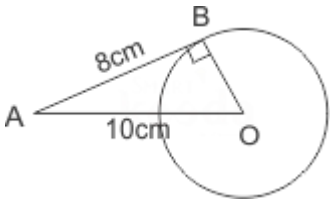
and $y = \frac{\sqrt{3} - 1}{\sqrt{3} + 1} \times \frac{\sqrt{3} - 1}{\sqrt{3} - 1} = \frac{3 + 1 - 2\sqrt{3}}{(\sqrt{3})^2 - (1)^2}$

$\Rightarrow y = 2 - \sqrt{3}$

$\therefore x^2 + y^2 = (2 + \sqrt{3})^2 + (2 - \sqrt{3})^2 = 14$

Hence, option C is correct.

7.



ΔABO is right angled at point B.

OB is the radius of the circle.

$\therefore OA^2 = OB^2 + AB^2$

$\Rightarrow 10^2 = 8^2 + OB^2$

$\Rightarrow OB^2 = 36$

$\Rightarrow$ OB, i.e. the radius = $\sqrt{36}$ = 6cm.

Hence, option D is correct.

8.

Area of trapezium = $\frac{1}{2}$ (sum of the parallel sides) × height

$= \frac{1}{2}(60 + 80) \times 20 = \frac{1}{2} \times 140 \times 20 = 1400\ m^2$

Hence, option B is correct.

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9. In a die there are 6 faces numbered 1, 2, 3, 4, 5 and 6.

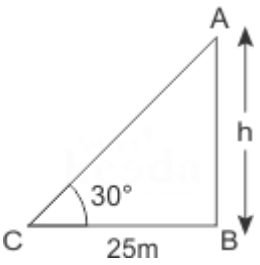
So, the total number of possible events (1, 2, 3, 4, 5 and 6) = 6

and the total number of favourable events (3, 4, 5 and 6) = 4

So, the reqd. probability = $\frac{4}{6} = \frac{2}{3}$

Hence, option A is correct.

10.



Let h be the height of the tree

In ΔACB,

$\tan 30° = \frac{AB}{BC} = \frac{h}{25}$

So, $\frac{1}{\sqrt{3}} = \frac{h}{25} \Rightarrow h = \frac{25}{\sqrt{3}}$

Hence, the height of the tree is $\frac{25}{\sqrt{3}}$ m.

Hence, option B is correct.

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