Maths Questions for CLAT Exam.

CLAT Maths Quiz 48

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

1. The length of a rectangular plot is 2.5 times its width. If the perimeter of the plot is 70 m. What is the length of the plot?

A. 25 m B. 15 m C. 33 m D. 16 m

2. If $x^2 + \frac{1}{x^2} = 79$, then find $x + \frac{1}{x}$.

A. ± 27 B. ± 8 C. ± 3 D. ± 9

3. Find the area of a triangle whose vertices are (1, 1), (5, 2) and (7, 4)

A. 5 units B. 3 units C. 7 units D. 8 units

4. There is a 4 m wide road inside a square shaped garden along the walls of garden. If area of the road is 1760 m^2, then what will be the perimeter of the garden?

A. 576 m B. 640 m C. 600 m D. 456 m

5. A land is in the form of a rectangle having length 20 m and width 15m .There is a square pit having dimension 15 m × 15m. This pit is to be filled uniformly up to a height of 4 m by the soil taken out by digging the rectangular field. Find out the depth of the rectangular field if the soil is taken out uniformly.

A. 3 m B. 5 m C. 6 m D. 9 m

6. There are 5 multiple choice questions in an examination. First three questions have 4 choices each and the remaining two questions have 5 choices each. How many sequences of answers are possible?

A. 1200 B. 1500 C. 1600 D. 1900

7. The angle of elevation from a point P on the ground to the top of a house of the height 10 m is 30°. If a flag is mounted on the top of the house and angle of elevation from the point P to the top of the flag is 45°, then what will be the height of flag?

A. 10 (2 + √3) m B. 10 (√3 – 1) m C. 10 (√3 + 1) m D. 10 (2 – √3) m

8. Simplify : $\frac{527 \times 527 \times 527 + 183 \times 183 \times 183}{527 \times 527 - 527 \times 183 + 183 \times 183}$

A. 710 B. 715 C. 820 D. 825

9. If Anil scores 80, 72, 80, 85 and 78 marks out of 100 in five different subjects in an examination. What is the average number of marks obtained by Anil?

A. 77 B. 78 C. 80 D. 79

10. A student required 45% marks to pass an examination. If he got 138 marks and failed by 15%, then what were the total marks of the examination?

A. 400 B. 450 C. 460 D. 500

Correct Answers:

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

Explanations:

1.

Let the width be x m and length be $\frac{5x}{2}$ m.

Then, $2\left(\frac{5x}{2} + x\right) = 70$

$\Rightarrow \frac{7x}{2} = 35 \Rightarrow x = \frac{35 \times 2}{7} = 10$ m

$\therefore$ Length $= \frac{5}{2} \times 10 = 25$m

Hence, option A is correct.

2.

$\left(x + \frac{1}{x}\right)^2 = x^2 + x \,.\, 2.\frac{1}{x} + \frac{1}{x^2}$

$\Rightarrow \left(x + \frac{1}{x}\right)^2 = x^2 + 2 + \frac{1}{x^2}$

$\therefore \left(x + \frac{1}{x}\right)^2 = 79 + 2 = 81$

$\Rightarrow x + \frac{1}{x} = \pm 9$

Hence, option D is correct.

3. Here $(x_1, y_1) = (1, 1)$, $(x_2, y_2) = (5, 2)$ and $(x_3, y_3) = (7, 4)$

$= \frac{1}{2} [x_1 (y_2 - y_3) + x_2 (y_3 - y_1) + x_3 (y_1 - y_2)]$

$= \frac{1}{2} [1 (2 - 4) + 5 (4 - 1) + 7 (1 - 2)]$

$= \frac{1}{2} (-2 + 15 - 7)$

$= \frac{1}{2} (6) = 3$ units

Hence, option B is correct.

---

4. Let the one side of garden be a,

then $a^2 - (a - 8)^2 = 1760$

$\Rightarrow a = 114$

Perimeter of garden $= 4a = 4 \times 114 = 456$m

Hence, option D is correct.

---

5. To fill the pit, soil required $= 15 \times 15 \times 4 = 900$ m^2

So, there will be a decrease of 900 m^3 soil in the rectangular field.

$\therefore 20 \times 15 \times h = 900$

$\Rightarrow h = \frac{900}{20 \times 15} = 3$ m

Hence, option A is correct.

---

6. Each one of the first three questions can be solved in 4 ways, and each one of the last two questions can be solved in 5 ways.

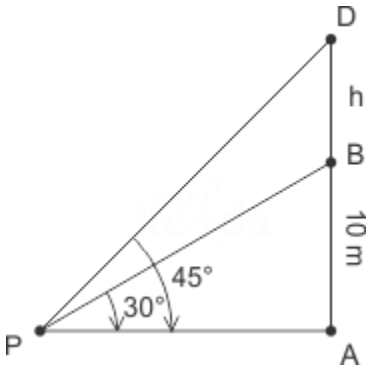
So the total number of different sequences of answers $= 4 \times 4 \times 4 \times 5 \times 5 = 4^3 \times 5^2 = 1600$

Hence, option C is correct.

7. Let AB be the building and BD be the flag.

In Δ APB, $\tan 30° = \frac{AB}{AP} = \frac{1}{\sqrt{3}} = \frac{10}{AP}$

$\Rightarrow AP = 10\sqrt{3}$ m



Let DB = h m, then AD = (10 + h) m

In Δ PAD, $\tan 45° = \frac{AD}{AP} = \frac{10 + h}{10\sqrt{3}}$

$\Rightarrow h = 10(\sqrt{3} - 1)$ m

Hence, option B is correct.

---

8. $\frac{(527)^3 + (183)^3}{(527)^2 - 527 \times 183 + (183)^2} = \frac{a^3 + b^3}{a^2 - ab + b^2} = a + b$

..(a = 527 and b = 183) as $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

= 527 + 183 = 710

Hence, option A is correct.

---

9. Total marks obtained = 80 + 72 + 80 + 85 + 78 = 395

∴ Average marks = $\frac{395}{5} = 79$

Hence, option D is correct.

---

10. A student failed by 15%, i.e. he got only 30%.

So 30% of total marks = 138

∴ Total marks = $\frac{138 \times 100}{30} = 460$

Hence, option C is correct.