

Section-C(3 marks each)

10. Find the roots of the equation

$$\frac{1}{2x-3} + \frac{1}{x-5} = 1, x \neq \frac{3}{2}, 5 \text{ Or}$$

A natural number, when increased by 12, becomes equal to 160 times its reciprocal. Find the number.

11. Find the sum of the integers between 100 and 200 that are divisible by 9

12. In figure, two tangents PQ and PR are drawn to a circle with center O from an external point P. Prove that $\angle QPR = 2 \angle OQR$

Or

Prove that the parallelogram circumscribing a circle is rhombus.

13. Draw a triangle ABC with sides BC = 6 cm, AB = 5 cm and $\angle ABC = 60^\circ$. Then construct a triangle whose sides are $\frac{3}{4}$ time the corresponding sides of $\triangle ABC$.

14. Cards with numbers 2 to 101 are placed in a box. A card is selected at random from the box. Find the probability that the card which is selected has a number which is a perfect square.

Section -D(4 marks each)

15. A train travels at a certain average speed for a distance of 63 km and then travels 72 km at an average speed of 6 km/h more than its original speed. If it takes 3 hours to complete the total journey, what is the original speed of average speed?

Or

Find two consecutive odd positive integers, sum of whose square is 290

16. Prove that the lengths of the tangent drawn from an external point to a circle are equal.

17. A sum of Rs 1400 is to be used to give seven cash prizes to a school for overall academic performance. If each prize is Rs 40 less than the preceding price, find the value of each cash prize.

JAWAHAR NAVODAY VIDYALAYA MOULI, PANCHKULA

Practice Paper
CLASS X MATHEMATICS

Time: 1 1/2 hrs

Max. Marks: 40

Section A (1 mark each)

- Which of the following equations has the sum of its roots as 3
 - $x^2 + 3x - 5 = 0$
 - $-x^2 + 3x + 3 = 0$
 - $x^2 + 3x + 5 = 0$
 - $3x^2 - 3x - 3 = 0$
- The sum of first five multiples of 3 is
 - 45
 - 65
 - 90
 - 75
- If radii of the two concentric circles are 15 cm and 17 cm, then the length of each chord of one circle which is tangent to other is.
 - 8 cm
 - 16 cm
 - 30 cm
 - 17 cm
- Two tangents make an angle of 120° with each other, are drawn to a circle of radius 6 cm, then the length of each tangent is equal to
 - $\sqrt{3}$ cm
 - $6\sqrt{3}$ cm
 - $\sqrt{2}$ cm
 - $2\sqrt{3}$ cm
- Which of the probability cannot be the probability of an event?
 - $\frac{1}{5}$
 - 0.3
 - 4%
 - $\frac{5}{4}$

Section-B(2 marks each)

6. Find the roots of the following quadratic equation :

$$\frac{2}{5}x^2 - x - \frac{3}{5} = 0$$

- If the numbers $x-2$, $4x-1$, and $5x+2$ are in A.P., find the value of x :
- Two tangents PA and PB are drawn from an external point P to a circle with centre O. Prove that AOBP is cyclic quadrilateral.
- Two dices are thrown at the same time. Find the probability of getting different numbers on both dice. Or
A coin is tossed two times. Find the probability of getting at most one head.

10. Find the roots of the equation

$$\frac{1}{2x-3} + \frac{1}{x-5} = 1, x \neq \frac{3}{2}, 5 \text{ Or}$$

A natural number, when increased by 12, becomes equal to 160 times its reciprocal. Find the number.

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CLASS X MATHEMATICS

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Section A (1 mark each)

1. Which of the following equations has the sum of its roots as 3

a) $x^2 + 3x - 5 = 0$

b) $-x^2 + 3x + 3 = 0$

c) $x^2 + 3x + 5 = 0$

d) $3x^2 - 3x - 3 = 0$

2. The sum of first five multiples of 3 is

a) 45

b) 65

c) 90

d) 75

3. If radii of the two concentric circles are 15 cm and 17 cm, then the length of each chord of one circle which is tangent to other is.

a) 8 cm

b) 16 cm

c) 30 cm

d) 17 cm

4. Two tangents make an angle of 120° with each other, are drawn to a circle of radius 6 cm, then the length of each tangent is equal to

a) $\sqrt{3}$ cm

b) $6\sqrt{3}$ cm

c) $\sqrt{2}$ cm

d) $2\sqrt{3}$ cm

5. Which of the probability cannot be the probability of an event?

a) $\frac{1}{5}$

b) 0.3

c) 4%

d) $\frac{5}{4}$

Section-B(2 marks each)

6. Find the roots of the following quadratic equation:

$$\frac{2}{5}x^2 - x - \frac{3}{5} = 0$$

7. If the numbers $x-2$, $4x-1$, and $5x+2$ are in A.P., find the value of x :

8. Two tangents PA and PB are drawn from an external point P to a circle with centre O. Prove that AOBP is cyclic quadrilateral.

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