CLASS IX : CHAPTER - 1
NUMBER SYSTEM

1. Which of the following is true?
(a) Every whole number is a natural number (b) Every integer is a rational number
(c) Every rational number is an integer (d) Every integer is a whole number

2. For Positive real numbers a and b, which is not true?
(a) $\sqrt{ab}=\sqrt{a}\sqrt{b}$ (b) $\left(a+\sqrt{b}\right)\left(a-\sqrt{b}\right)=a^2-b$
(c) $\sqrt{\frac{a}{b}}=\frac{\sqrt{a}}{\sqrt{b}}$ (d) $\left(\sqrt{a}+\sqrt{b}\right)\left(\sqrt{a}-\sqrt{b}\right)=a+b$

3. Out of the following, the irrational number is
(a) $1.\overline{5}$ (b) $2.4\overline{77}$ (c) $1.2\overline{77}$ (d) π

4. To rationalize the denominator of $\frac{1}{\sqrt{a}+b}$, we multiply this by
(a) $\frac{1}{\sqrt{a}+b}$ (b) $\frac{1}{\sqrt{a}-b}$ (c) $\frac{\sqrt{a}+b}{\sqrt{a}+b}$ (d) $\frac{\sqrt{a}-b}{\sqrt{a}-b}$

5. The number of rational numbers between $\sqrt{3}$ and $\sqrt{5}$ is
(a) One (b) 3 (c) none (d) infinitely many

6. If we add two irrational numbers, the resulting number
(a) is always an irrational number (b) is always a rational number
(c) may be a rational or an irrational number (d) always an integer

7. The rationalizing factor of $7-2\sqrt{3}$ is
(a) $7-2\sqrt{3}$ (b) $7+2\sqrt{3}$ (c) $5+2\sqrt{3}$ (d) $4+2\sqrt{3}$

8. If $\frac{1}{7}=0.\overline{142857}$, then $\frac{4}{7}$ equals
(a) 0.428571 (b) 0.571428 (c) 0.857142 (d) 0.285718

9. The value of n for which $\sqrt{n}$ be a rational number is
(a) 2 (b) 4 (c) 3 (d) 5

10. $\frac{3\sqrt{12}}{6\sqrt{27}}$ equals
(a) $\frac{1}{2}$ (b) $\sqrt{2}$ (c) $\sqrt{3}$ (d) $\frac{1}{3}$

11. $\left(3+\sqrt{3}\right)\left(3-\sqrt{2}\right)$ equals
(a) $9-5\sqrt{2}-\sqrt{6}$ (b) $9-\sqrt{6}$ (c) $3+\sqrt{2}$ (d) $9-3\sqrt{2}+3\sqrt{3}-\sqrt{6}$

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12. The arrangement of $\sqrt{2}, \sqrt{5}, \sqrt{3}$ in ascending order is

(a) $\sqrt{2}, \sqrt{3}, \sqrt{5}$ (b) $\sqrt{2}, \sqrt{5}, \sqrt{3}$ (c) $\sqrt{5}, \sqrt{3}, \sqrt{2}$ (d) $\sqrt{3}, \sqrt{2}, \sqrt{5}$

13. If m and n are two natural numbers and $m^n = 32$, then n^{mn} is

(a) 5^2 (b) 5^3 (c) 5^{10} (d) 5^{12}

14. If $\sqrt{10} = 3.162$, then the value of $\frac{1}{\sqrt{10}}$ is

(a) 0.3162 (b) 3.162 (c) 31.62 (d) 316.2

15. If $\left(\frac{3}{4}\right)^6 \times \left(\frac{16}{9}\right)^5 = \left(\frac{4}{3}\right)^{x+2}$, then the value of x is

(a) 2 (b) 4 (c) -2 (d) 6

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CLASS IX : CHAPTER - 2
POLYNOMIALS

1. Which of the following is not a polynomial?

(a) $x^2+\sqrt{2}x+3$ (b) $x^2+\sqrt{2x}+6$ (c) x^3+3x^2-3 (d) $6x+4$

2. The degree of the polynomial $3x^3 - x^4 + 5x + 3$ is

(a) –4 (b) 4 (c) 1 (d) 3

3. Zero of the polynomial $p(x) = a^2x$, $a \neq 0$ is

(a) $x = 0$ (b) $x = 1$ (c) $x = -1$ (d) $a = 0$

4. Which of the following is a term of a polynomial?

(a) $2x$ (b) $\frac{3}{x}$ (c) $x^{\sqrt{x}}$ (d) $\sqrt{x}$

5. If $p(x) = 5x^2 - 3x + 7$, then $p(1)$ equals

(a) –10 (b) 9 (c) –9 (d) 10

6. Factorisation of $x^3 + 1$ is

(a) $(x + 1)(x^2 - x + 1)$ (b) $(x + 1)(x^2 + x + 1)$

(c) $(x + 1)(x^2 - x - 1)$ (d) $(x + 1)(x^2 + 1)$

7. If $x + y + 2 = 0$, then $x^3 + y^3 + 8$ equals

(a) $(x + y + 2)^3$ (b) 0 (c) 6xy (d) –6xy

8. If $x = 2$ is a zero of the polynomial $2x^2 + 3x - p$, then the value of p is

(a) –4 (b) 0 (c) 8 (d) 14

9. $x+\frac{1}{x}$ is

(a) a polynomial of degree 1 (b) a polynomial of degree 2

(c) a polynomial of degree 3 (d) not a polynomial

10. Integral zeroes of the polynomial $(x + 3)(x - 7)$ are

(a) –3, –7 (b) 3, 7 (c) –3, 7 (d) 3, –7

11. The remainder when $p(x) = 2x^2 - x - 6$ is divided by $(x - 2)$ is

(a) $p(-2)$ (b) $p(2)$ (c) $p(3)$ (d) $p(-3)$

12. If $2\left(a^2+b^2\right)=(a+b)^2$, then

(a) $a + b = 0$ (b) $a = b$ (c) $2a = b$ (d) $ab = 0$

13. If $x^3 + 3x^2 + 3x + 1$ is divided by $(x + 1)$, then the remainder is

(a) –8 (b) 0 (c) 8 (d) $\frac{1}{8}$

14. The value of $(525)^2 - (475)^2$ is

(a) 100 (b) 1000 (c) 100000 (d) –100

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15. If $a + b = -1$, then the value of $a^3 + b^3 - 3ab$ is

(a) –1 (b) 1 (c) 26 (d) –26

16. The value of $(2-a)^3 + (2-b)^3 + (2-c)^3 - 3(2-a)(2-b)(2-c)$ when $a + b + c = 6$ is

(a) –3 (b) 3 (c) 0 (d) –1

17. If $\frac{a}{b} + \frac{b}{a} = 1, (a \neq 0, b \neq 0)$, then the value of $a^3 - b^3$ is

(a) –1 (b) 0 (c) 1 (d) $\frac{1}{2}$

18. If $x = \frac{1}{2-\sqrt{3}}$, then the value of $(x^2 - 4x + 1)$ is

(a) –1 (b) 0 (c) 1 (d) 3

19. The number of zeroes of the polynomial $x^3 + x - 3 - 3x^2$ is

(a) 1 (b) 2 (c) 0 (d) 3

20. If $(x + 2)$ and $(x - 2)$ are factors of $ax^4 + 2x - 3x^2 + bx - 4$, then the value of $a + b$ is

(a) –7 (b) 7 (c) 14 (d) –8

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CLASS IX: CHAPTER – 4
LINEAR EQUATION IN TWO VARIABLES

1. Any point on the $y = x$ is of the form

(a) (a, a) (b) (0, a) (c) (a, 0) (d) (a, –a)

2. The equation of x –axis is of the form

(a) $x = 0$ (b) $y = 0$ (c) $x + y = 0$ (d) $x = y$

3. Graph of $y = 6$ is a line:

(a) parallel to x – axis at a distance 6 units from the origin
(b) parallel to y – axis at a distance 6 units from the origin
(c) making an intercept 6 on the x –axis.
(d) making an intercept 6 on both the axes.

4. x=5, y=2 is a solution of the linear equation

(a) $x + 2y = 7$ (b) $5x + 2y = 7$ (c) $x + y = 7$ (d) $5x + y = 7$

5. If a linear equation has solutions (–2, 2), (0, 0) and (2, –2), then its is of the form

(a) $y - x = 0$ (b) $x + y = 0$ (c) $-2x + y = 0$ (d) $-x + 2y = 0$

6. The positive solutions of the equation is $ax + by + c = 0$ always lie in the

(a) 1^{st} quadrant (b) 2^{nd} quadrant (c) 3^{rd} quadrant (d)4^{th} quadrant

7. The graph of the linear equation $2x + 3y = 6$ is a line which meets the x axis at the point

(a) (2, 0) (b) (0, 3) (c) (3, 0) (d) (0, 2)

8. The graph of the $y = x$ passes through the point

(a) $\left(\frac{3}{2}, -\frac{3}{2}\right)$ (b) $\left(0, \frac{3}{2}\right)$ (c) (1, 1) (d) $\left(\frac{-1}{2}, \frac{1}{2}\right)$

9. If we multiply or divide both sides of a linear equation with a non-zero number, then the solution of the linear equation:

(a) changes (b) remains the same
(c) changes in case of multiplication only (d) changes in case of division only

10. How many linear equation in x and y can be satisfied by $x = 1$ and $y = 2$?

(a) only one (b) two (c) infinitely many (d) three

11. The point of the form (a, a) always lies on:

(a) x – axis (b) y – axis (c) on the line $y = x$ (d) on the $x + y = 0$

12. The point of the form (a, –a) always lies on:

(a) $x = a$ (b) $y = -a$ (c) $y = x$ (d) $x + y = 0$

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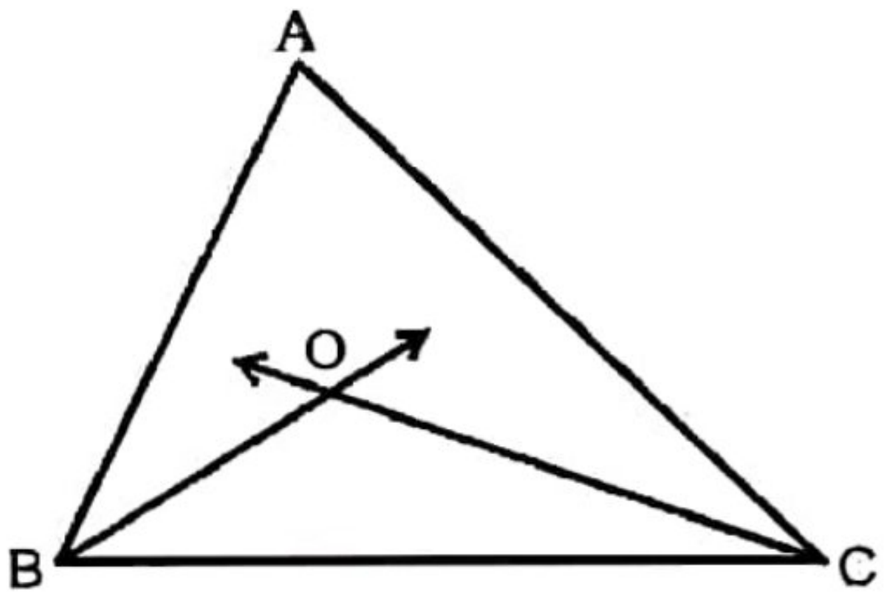
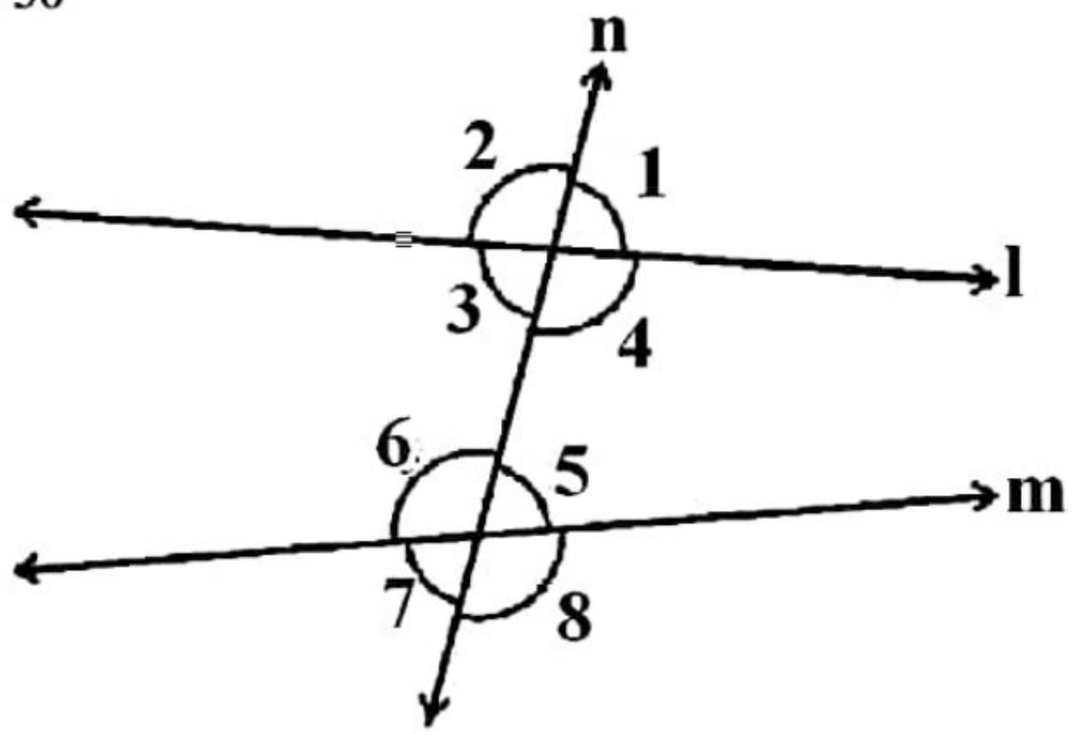
CLASS IX: CHAPTER - 6
LINES AND ANGLES

1. What is the common between the three angles of a triangle and a linear pair
(a) angles are equal (b) in both cases sum of angle is 180^0.
(c) In triangle there are three angles and in linear pair there are two angles (d) none of these.

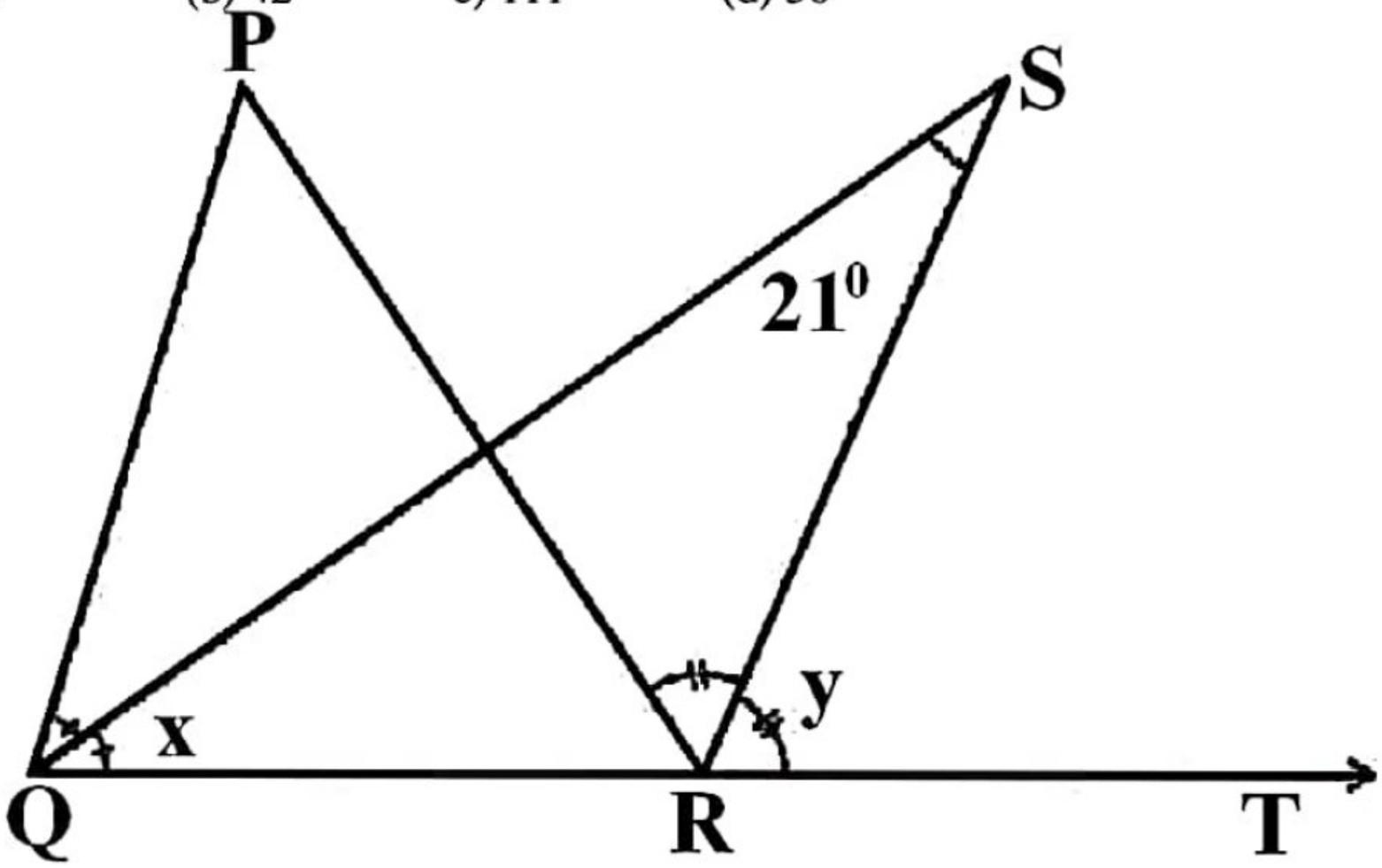
2. In the given below left figure, the bisectors of $\angle ABC$ and $\angle BCA$, intersect each other at point O. If $\angle BOC = 100^0$, the $\angle A$ is
(a) 30^0 (b) 20^0 c) 40^0 (d) 50^0





3. In the given above right sided figure, $\angle 2$ and $\angle 8$ are known as
(a) exterior angles (b) exterior angles on the same side of transversal.
(c) alternate angles (d) alternate exterior angles.

4. In the given figure, measure of $\angle QPR$ is
(a) 10.5^0 (b) 42^0 c) 111^0 (d) 50^0



5. An angle is 200 more than three times the given angle. If the two angles are supplementary the angles are
(a) 20^0 and 160^0 (b) 40^0 and 140^0 c) 60^0 and 120^0 (d) 70^0 and 110^0

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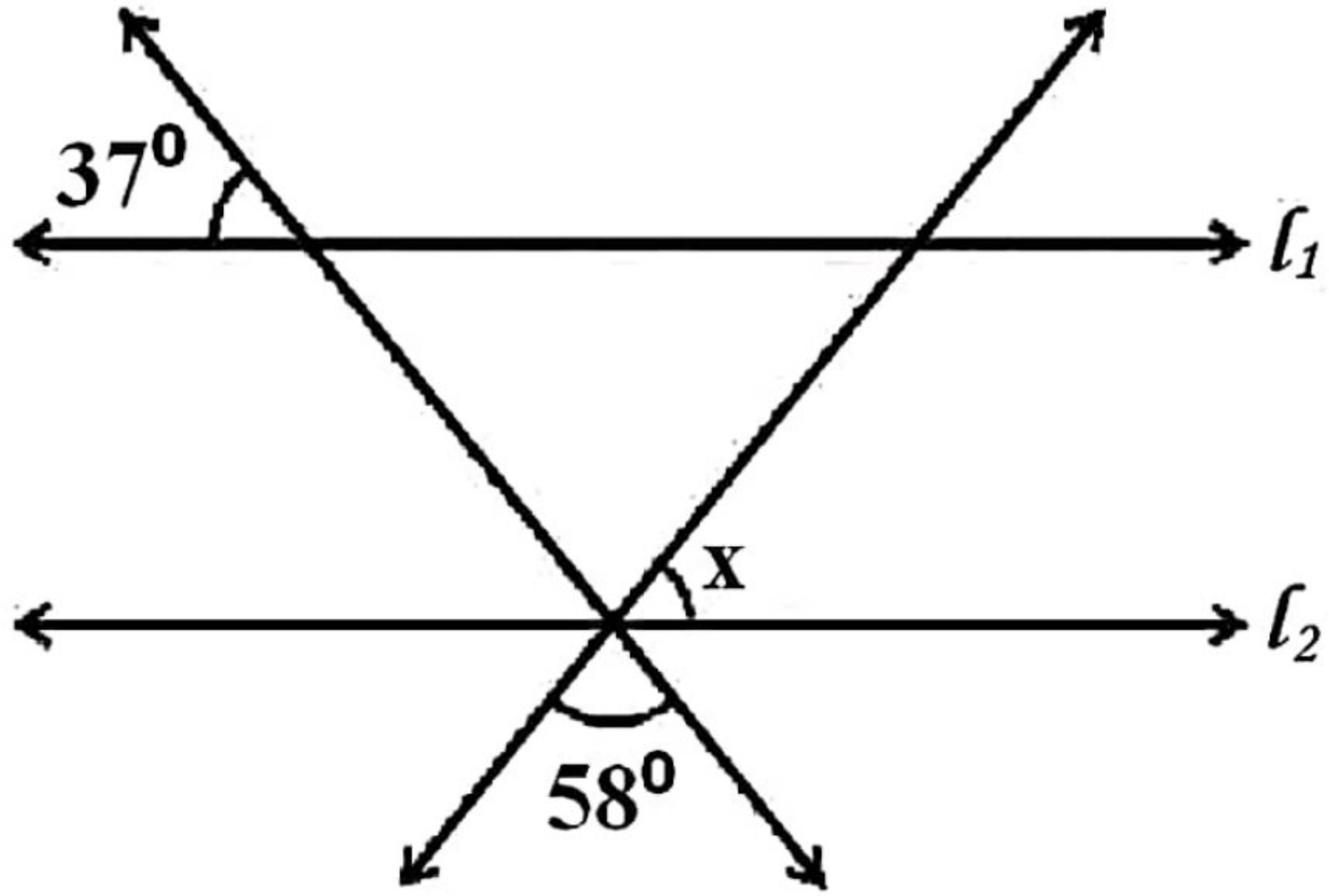
6. In figure, if $l_1 \parallel l_2$, what is the value of x

(a) 90^0 (b) 85^0 c) 75^0 (d) 70^0



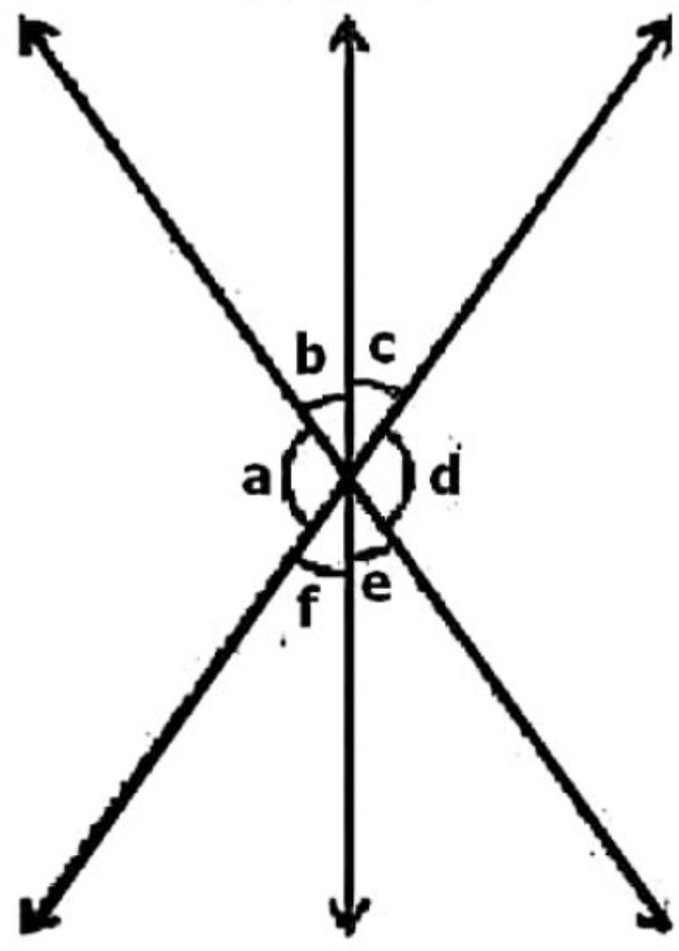
7. If a wheel has six spokes equally spaced, then the measure of the angle between two adjacent spokes is

(a) 90^0 (b) 30^0 c) 60^0 (d) 180^0

8. In figure, which of the following statements must be true?

(i) $a + b = d + c$ (ii) $a + c + e = 180^0$ (iii) $b + f = c + e$

(a) (i) only (b) (ii) only c) (iii) only (d) (ii) and (iii) both



9. The angle which is two times its complement is

(a) 60^0 (b) 30^0 c) 45^0 (d) 72^0

10. The angle which is two times its supplement is

(a) 150^0 (b) 60^0 c) 90^0 (d) 120^0

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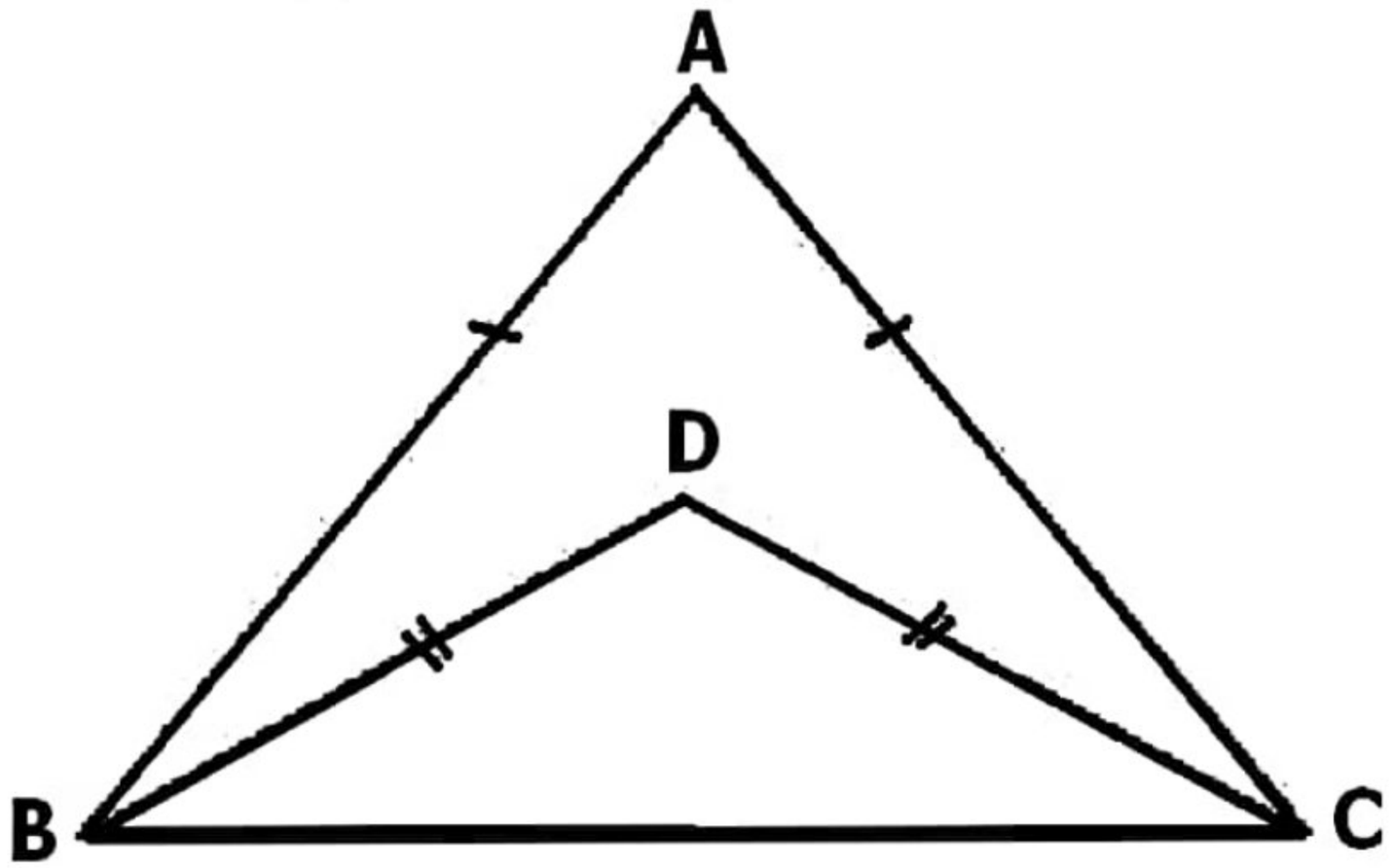
CLASS IX: CHAPTER - 7
TRIANGLES

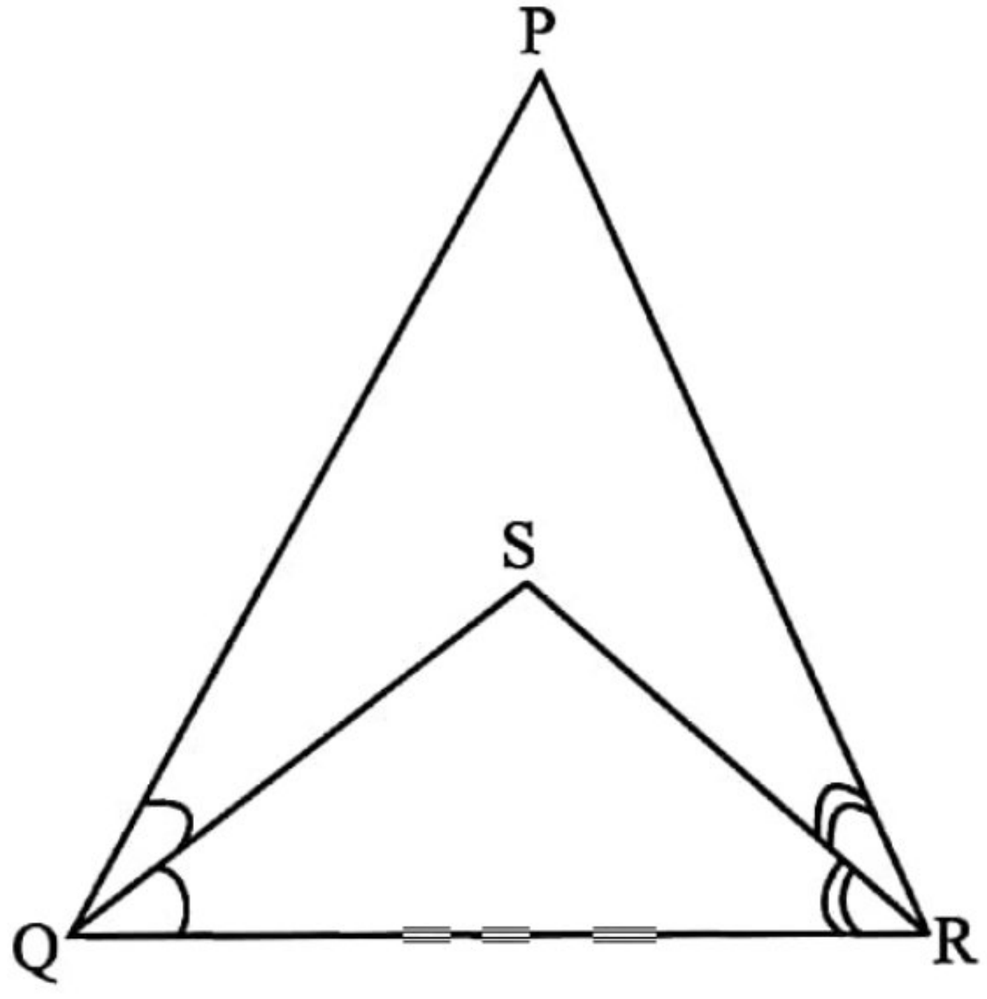
1. If one angle of a triangle is equal to the sum of other two angles, then the triangle is
(a) an Equilateral triangle (b) an Isosceles triangle
(c) an obtuse triangle (d) a right triangle .

2. In the given figure, the ratio $\angle ABD : \angle ACD$ is
(a) 1 : 1 (b) 2 : 1 (c) 1 : 2 (d) 2 : 3



3. $\angle x$ and $\angle y$ are exterior angles of a ΔABC, at the points B and C respectively. Also $\angle B > \angle C$, then relation between $\angle x$ and $\angle y$ is
(a) $\angle x > \angle y$ (b) $\angle x < \angle y$ (c) $\angle x = \angle y$ (d) none of these

4. In the given figure, PQ > PR, QS and RS are the bisectors of $\angle Q$ and $\angle R$ respectively, then
(a) SQ > SR (b) SQ < SR (c) SQ = SR (d) none of these



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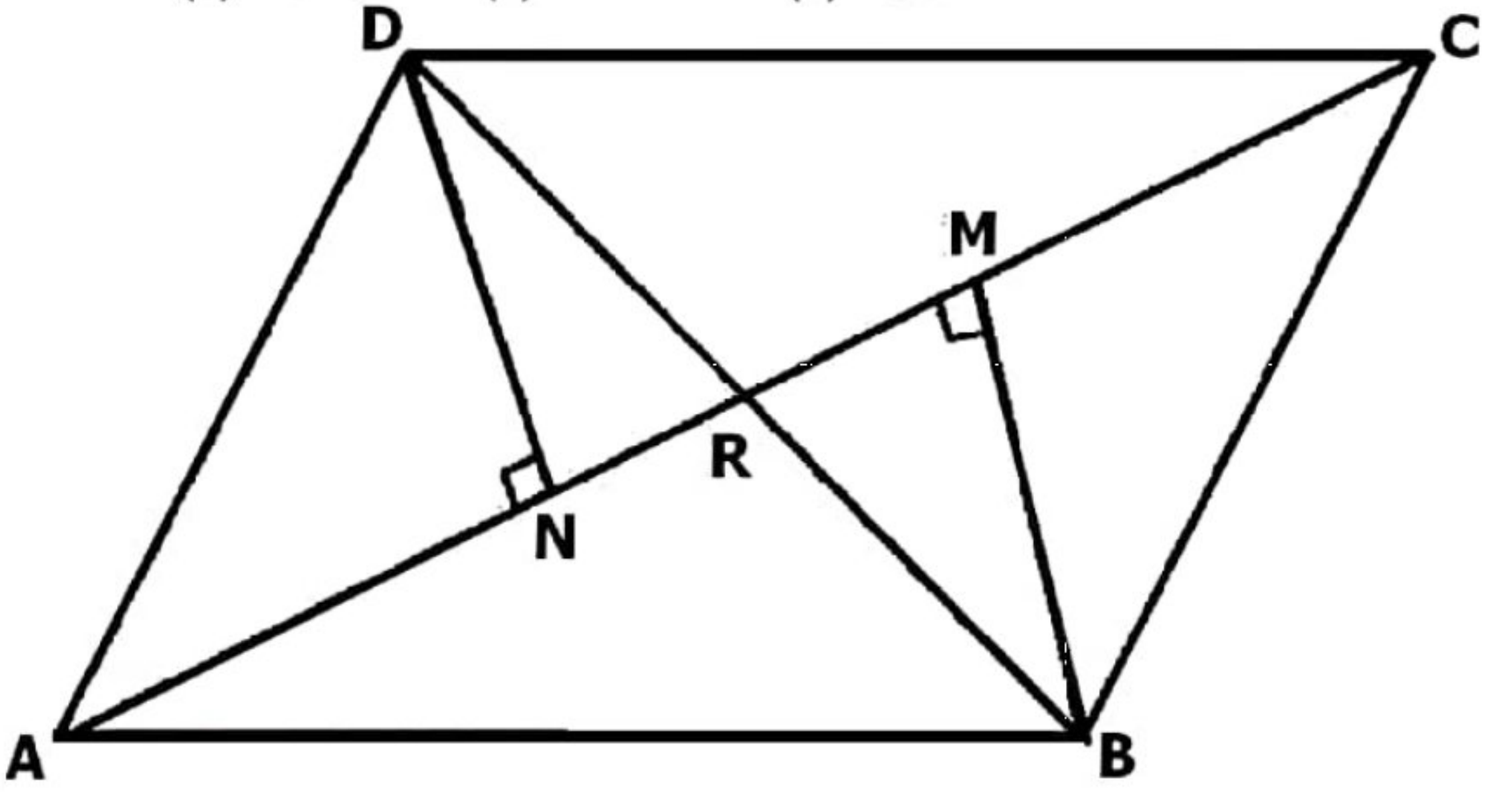
5. If the bisector of vertical angle of a triangle is perpendicular to the base of triangle is
(a) an Equilateral triangle (b) a scalene triangle
(c) an obtuse angled triangle (d) an acute angled triangle .

6. In a ΔABC and ΔPQR, three equality relations between same parts are as follows:
$AB = QP$, $\angle B = \angle P$ and $BC = PR$
State which of the congruence conditions applies:
(a) SAS (b) ASA (c) SSS (d) RHS

7. D, E , F are the midpoints of the sides BC, CA and AB respectively of ΔABC, then ΔDEF is congruent to triangle
(a) ABC (b) AEF
(c) BFD, CDE (d) AFE, BFD, CDE

8. In quadrilateral ABCD, BM and DN are drawn perpendicular to AC such that BM = DN. If BR = 8 cm, then BD is
(a) 4 cm (b) 2 cm (c) 12 cm (d) 16 cm



9. If $\Delta ABC \cong \Delta PQR$ and ΔABC is not congruent to ΔRPQ, then which of the following is not true:
(a) $BC = PQ$ (b) $AC = PR$ (c) $QR = BC$ (d) $AB = PQ$

10. D is a point on the side BC of a $\angle ABC$ such that AD bisects ΔBAC. Then
(a) $BD = CD$ (b) $BA > BD$ (c) $BD > BA$ (d) $CD > CA$

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CLASS IX: CHAPTER - 12
HERON'S FORMULA

1. The sides of a triangle are 3 cm , 4 cm and 5 cm. Its area is
(a) 12 cm^2 (b) 15 cm^2 (c) 6 cm^2 (d) 9 cm^2

2. The area of isosceles triangle whose equal sides are equal to 3 cm and other side is 4 cm. Its area is
(a) 20 cm^2 (b) $4\sqrt{5}$ cm^2 (c) $2\sqrt{5}$ cm^2 (d) 10 cm^2

3. The area of a triangular sign board of sides 5 cm , 12 cm and 13 cm is
(a) $\frac{65}{2}$ cm^2 (b) 30 cm^2 (c) 60 cm^2 (d) 12 cm^2

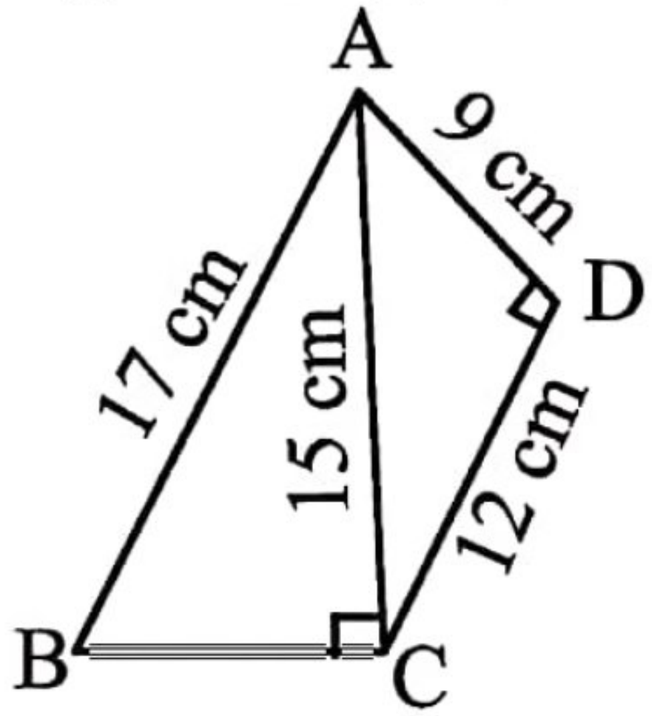
4. The side of a triangle are in the ratio of 25 : 14 : 12 and its perimeter is 510m. The greatest side of the triangle is
(a) 120 m (b) 170 m (c) 250 m (d) 270 m

5. The perimeter of a right triangle is 60 cm and its hypotenuse is 26 cm. The other two sides of the triangle are
(a) 24 cm. 10 cm (b) 25 cm. 9 cm (c) 20 cm. 14 cm (d) 26 cm. 8 cm

6. The area of quadrilateral ABCD in which AB = 3 cm, BC = 4 cm, CD = 4 cm, DA = 5 cm and AC = 5 cm is
(a) 15.2 cm^2 (b) 14.8 cm^2 (c) 15 cm^2 (d) 16.4 cm^2

7. The area of trapezium in which the parallel sides are 28 m and 40 m, non parallel sides are 9 m and 15 m is
(a) 286 m^2 (b) 316 m^2 (c) 306 m^2 (d) 296 m^2

8. The area of quadrilateral ABCD in the below figure is
(a) 57 cm^2 (b) 95 cm^2 (c) 102 cm^2 (d) 114 cm^2



9. A traffic signal board indicating 'SCHOOL AHEAD' is an equilateral triangle with side a, then height of the traffic signal is:
(a) $\frac{\sqrt{3}}{2}a^2$ (b) $\frac{\sqrt{3}}{4}a^2$ (c) $\frac{\sqrt{3}}{2}a$ (d) none of these

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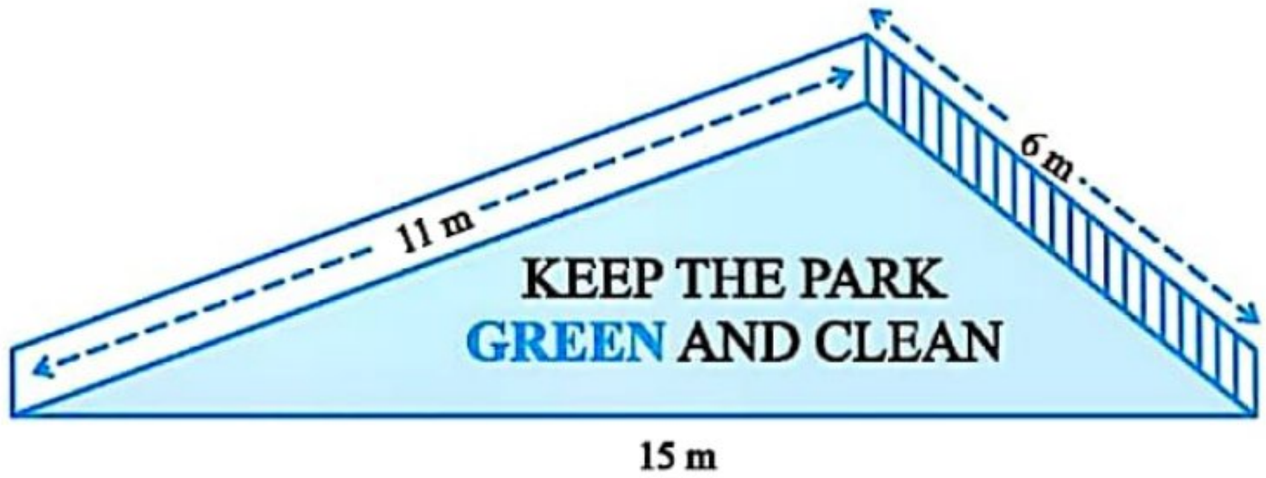
10. There is a slide in a park. One of its side walls has been painted in some colour with a message "KEEP THE PARK GREEN AND CLEAN". If the sides of the wall are 15 m, 11 m and 6 m, The area painted in colour is:



(a) $10\sqrt{2}\ m^2$ (b) $20\sqrt{2}\ m^2$ (c) $30\sqrt{2}\ m^2$ (d) none of these

11. An isosceles right triangle has area 8 cm2. The length of its hypotenuse is

(a) $\sqrt{32}$ cm (b) $\sqrt{16}$ cm (c) $\sqrt{48}$ cm (d) $\sqrt{24}$ cm

12. The edges of a triangular board are 6 cm, 8 cm and 10 cm. The cost of painting it at the rate of 9 paise per cm2 is

(a) Rs 2.00 (b) Rs 2.16 (c) Rs 2.48 (d) Rs 3.00

13. The area of an isosceles triangle having base 2 cm and the length of one of the equal sides 4 cm, is

(a) $\sqrt{15}\ cm^2$ (b) $\sqrt{\frac{15}{2}}\ cm^2$ (c) $2\sqrt{15}\ cm^2$ (d) $4\sqrt{15}\ cm^2$

14. The sides of a triangle are 35 cm, 54 cm and 61 cm, respectively. The length of its longest altitude

(a) $16\sqrt{5}$ cm (b) $10\sqrt{5}$ cm (c) $24\sqrt{5}$ cm (d) 28 cm

15. If the area of an equilateral triangle is $16\sqrt{3}$ cm2, then the perimeter of the triangle is

(a) 48 cm (b) 24 cm (c) 12 cm (d) 36 cm

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