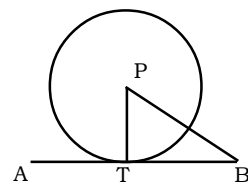
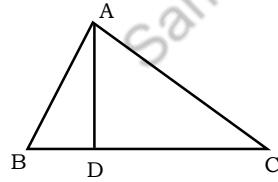


- Q.1 The roots of the quadratic equation are -2 and $\frac{11}{2}$ then the equation is
- a) $x^2 + 5x + 3 = 0$ b) $x^2 + 3x + 22 = 0$
c) $2x^2 - 4x + 11 = 0$ d) $2x^2 - 7x - 22 = 0$
- Q.2 If $21x = 196 - x^2$ then $x =$
- a) 24, 5 b) - 28, 7 c) - 28, 4 d) - 22, 7
- Q.3 If $5m^2 - 2m = 2$ then $m =$
- a) $m = \frac{1 \pm \sqrt{11}}{5}$ b) $m = \frac{2 \pm \sqrt{7}}{5}$
c) $-\frac{1 \pm \sqrt{13}}{4}$ d) $\frac{3 \pm \sqrt{11}}{2}$
- Q.4 If the roots of the quadratic equation $x^2 + kx + 40 = 0$ are in the ratio $2 : 5$ then the value of $k =$
- a) $k = \pm 8$ b) $k = \pm 16$ c) $k = \pm 14$ d) $k = \pm 10$
- Q.5 A fraction becomes $\frac{1}{3}$ if 1 is subtracted from both the numerator and denominator. If one is added to both the numerator and the denominator it becomes $\frac{1}{2}$ then the fraction is
- a) $\frac{2}{5}$ b) $\frac{3}{5}$ c) $\frac{3}{7}$ d) $\frac{4}{5}$
- Q.6 If $9x - 5y - 5 = 0$ and $18x - 35y = 0$ then
- a) $x = \frac{1}{9}$ $y = \frac{3}{5}$ b) $x = \frac{2}{9}$ $y = \frac{1}{5}$
c) $x = \frac{7}{9}$ $y = \frac{2}{5}$ d) $x = \frac{5}{9}$ $y = \frac{3}{5}$
- Q.7 If $\frac{x}{3} + \frac{y}{4} = 11$ and $\frac{5x}{6} - \frac{y}{3} = -7$ then
- a) $x = 2$ $y = 30$ b) $x = 4$ $y = 28$ c) $x = 6$ $y = 36$ d) $x = 6$ $y = 32$
- Q.8 If $(x + a)$ is a factor of $2x^2 + 2ax + 5x + 10$ then $a =$
- a) 2 b) - 2 c) 5 d) - 5
- Q.9 A quadratic polynomial, one of whose zeroes is $2 + \sqrt{5}$ and sum of whose zeroes is 4, is
- a) $x^2 + 4x - 1$ b) $x^2 - 4x - 1$ c) $x^2 - 4x + 1$ d) $x^2 + 4x + 1$
- Q.10 For which value of k the equations, $x - 2y = 3$ and $3x + ky = 1$ have a unique solution?
- a) $k \neq -4$ b) $k \neq -3$ c) $k \neq 6$ d) $k \neq -6$
- Q.11 In the fig point P is the centre of the circle and line AB is the tangent to the circle at T. The radius of the circle is 6 cm and $\angle TPB = 60^\circ$ then length of PB
- a) 15 b) 11 c) 12 d) 10



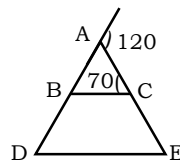
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- Q. 12 In $\triangle ABC$, AD is the bisector of $\angle A$
 AB = 3.4 cm BD = 4 cm BC = 10 cm
 then AC =
 a) 5.1 b) 7.2 c) 4.5 d) 6.2



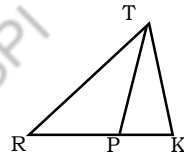
- Q. 13 The Areas of two similar triangles are 81 cm^2 and 49 cm^2 respectively. Then the ratio of their corresponding heights will be
 a) 4 : 3 b) 9 : 7 c) 2 : 3 d) 9 : 2
- Q. 14 A ladder 10 meter long reaches a window 8 meter above the ground. Then the distance of the foot of the ladder from the base of the wall is
 a) 4 meter b) 7 meter c) 9 meter d) 6 meter

- Q. 15 $\triangle ABC$ is similar $\triangle ADE$ then the measure of angle D =
 a) 80° b) 50° c) 70° d) 60°

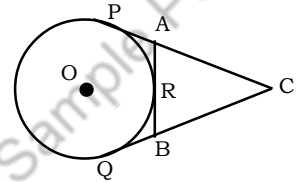


- Q. 16 In fig RP : PK = 3 : 2 then
 Area of $\triangle TRP$: Area of $\triangle TPK$ =

- a) 3 : 2 b) 4 : 3 c) 3 : 5 d) 2 : 3



- Q. 17 CP and CQ are tangents from the point C to the circle with centre O. AB is another tangent which touches the circle at R. If CP = 11 cm. and BR = 4 cm. Then length of BC =
 a) 5 cm b) 4 cm c) 9 cm d) 7 cm



- Q. 18 The perimeter of a sector of a circle of radius 15 cm is 54 cm. Then the Area of the sector will be
 a) 160 cm^2 b) 140 cm^2 c) 120 cm^2 d) 180 cm^2

- Q. 19 A wheel rotates 25000 times to cover a distance of 88 km. Then its radius is cm ($\pi = \frac{22}{7}$)
 a) 64 cm b) 56 cm c) 72 cm d) 54 cm

- Q. 20 Equation of the line passing through the point (- 3, - 5) and parallel to $x - 2y - 7 = 0$ is
 a) $2x - y + 7 = 0$ b) $x - 5y - 7 = 0$
 c) $x + 3y - 9 = 0$ d) $x - 2y - 7 = 0$

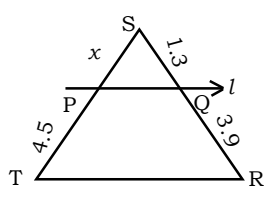
- Q. 21 The slope of the line passing through the points A (- 4, - 5) and B (- 1, - 2) is
 a) $\frac{1}{2}$ b) $\frac{1}{3}$ c) 1 d) 2

- Q. 22 A line with slope 4 makes an intercept with y axis at 3 then its equation is
 a) $y = 3x + 1$ b) $y = x + 2$
 c) $y = 4x + 3$ d) $y = 5x - 1$

- Q. 23 Equation of the line passing through the point $(-2, -3)$ and having slope $\frac{3}{5}$ is
- a) $2x - 3y + 9 = 0$ b) $3x + y - 9 = 0$
 c) $3x - 5y - 9 = 0$ d) $x + 4y + 11 = 0$

- Q. 24 If the vertices of the triangle are $(3, -5)$ $(-7, 4)$ $(10, -k)$ and its centroid is $(k, -1)$ then $k =$
- a) $k = 3$ b) $k = 1$ c) $k = 2$ d) $k = 4$

- Q. 25 In the given figure line l is parallel to the side TR then length of SP = x is equal to



- a) 2.5 b) 1.9 c) 1.5 d) 2.1

- Q. 26 The end points of the diameter of a circle are $(-2 \sin \theta, -2 \cos \theta)$ and $(2 \sin \theta, 2 \cos \theta)$. Then the radius of the circle will be
- a) 2 units b) 3 units c) 2.5 units d) 3.5 units

- Q. 27 If the point P $(-1, -1)$ divides the join of A $(-3, 3)$ and B internally in the ratio 2 : 3 then the coordinates of B will be
- a) $(2, -7)$ b) $(3, -7)$ c) $(4, -3)$ d) $(7, -2)$

- Q. 28 Distance between the points A $(\cos \theta, \sin \theta)$ and B $(\sin \theta, -\cos \theta)$ is
- a) $\sqrt{2}$ b) $\sqrt{3}$ c) $\sqrt{5}$ d) $\sqrt{7}$

- Q. 29 If A $(2, -1)$ B $(3, 2)$ C $(-4, 5)$ are the vertices of the parallelogram ABCD, then the coordinates of D will be.
- a) $(-3, 2)$ b) $(-7, 3)$ c) $(-5, 1)$ d) $(-5, 2)$

- Q. 30 The value of $\frac{\sin 30 - 2 \tan 45 + \cos 60}{\sin 45 \cos 45 + 2 \sin 30 \cos 60} =$
- a) 2 b) -1 c) -2 d) 1

- Q. 31 The value of $\frac{2 \tan 53}{\cot 37} - \frac{\cot 80}{\tan 10} =$
- a) zero b) -2 c) 1 d) 2

- Q. 32 The value of $[\cos (90 - \theta) + \sin (90 - \theta)]^2 + [\sin (90 - \theta) - \cos (90 - \theta)]^2 =$
- a) 3 b) 2 c) 1 d) 4

- Q. 33 If $\tan \theta = \frac{8}{7}$ then the value of $\frac{(1 + \cos \theta)(1 - \cos \theta)}{(1 + \sin \theta)(1 - \sin \theta)} =$
- a) $\frac{49}{64}$ b) $\frac{35}{64}$ c) $\frac{64}{49}$ d) $\frac{64}{35}$

- Q. 34 If $\sec^2 \theta (1 + \sin \theta) (1 - \sin \theta) = k$ then value of k is
- a) $\cos \theta$ b) $\sin \theta$ c) 1 d) $\frac{1}{\cos \theta}$

- Q. 35 If $\cos(81^\circ + \theta) = \sin\left(\frac{K}{3} - \theta\right)$ then $K =$
- a) $K = 43.5^\circ$ b) $K = 54^\circ$ c) $K = 27^\circ$ d) $K = 13.5^\circ$
- Q. 36 The angles of elevation of the top of a tower from two points at a distance 'a' and 'b' from the base and in the same straight line with it are complementary. Then the height of the tower is
- a) $2a$ b) \sqrt{a} c) \sqrt{b} d) \sqrt{ab}
- Q. 37 The arithmetic mean and the geometric mean of two numbers are in the ratio 5 : 4 and sum of these two numbers is 30 then the numbers will be.
- a) 4, 26 b) 2, 28 c) 12, 18 d) 6, 24
- Q. 38 In G.P. sum of six terms = 126 and sum of three terms = 14 then its first term is
- a) 3 b) 1 c) 2 d) 4
- Q. 39 The sum of first 51 terms of the A.P. whose 2nd term is 2 and 4th term is 8 is
- a) 4374 b) 3774 c) 3477 d) 3747
- Q. 40 If the first term of an A.P. is 7 and 7th term is 19 then common difference of the A.P. is
- a) 4 b) 3 c) 1 d) 2
- Q. 41 The sum of 2, 4, 6, n terms =
- a) $n^2 - 1$ b) $n^2 + n$ c) $n^2 + 1$ d) n^2
- Q. 42 If the last term of an A.P. is 119 and 8th term from the end is 91 then the common difference of A.P. is
- a) - 3 b) 4 c) 3 d) 2
- Q. 43 If the sum of n terms of an A.P. is $3n^2 + 4n$. Then the common difference of A.P. is
- a) 7 b) 5 c) 8 d) 6
- Q. 44 For some Integer m every odd integer is of the form
- a) $m + 1$ b) m c) 2m d) $2m + 1$
- Q. 45 If LCM of (p, q) = 6 and HCF of (p, q) = 2 then $p^2 q^2 =$
- a) 144 b) 12 c) 24 d) 64
- Q. 46 If α, β are the zeroes of the polynomial. $4u^2 + 3u + 7$ then $\frac{1}{\alpha} + \frac{1}{\beta} =$
- a) $\frac{3}{7}$ b) $\frac{25}{12}$ c) $-\frac{25}{12}$ d) $\frac{25}{36}$
- Q. 47 Zeroes of the polynomial $\sqrt{3}x^2 + 10x + 7\sqrt{3}$ are
- a) $\sqrt{3}, \frac{7}{\sqrt{3}}$ b) $-\sqrt{3}, \frac{7}{3}$ c) $-\sqrt{3}, -\frac{7}{3}$ d) $\sqrt{3}, -\frac{7}{\sqrt{3}}$
- Q. 48 A cubic polynomial whose zeroes are - 2, - 3 and - 1 is
- a) $x^3 + 11x^2 + 6x + 1$ b) $x^3 + 6x^2 + 11x + 6$
c) $x^3 + 11x^2 + x + 6$ d) $x^3 + 6x^2 + 6x + 11$

- Q. 49 The height of the conical tent is 14 m. and its floor area is 346.5 m^2 . How much canvas of width 1.1 m. will be required for it ?
 a) 500 m. b) 550 m. c) 525 m. d) 510 m.
- Q. 50 If three cubes each of edge 'a' are joined together to form a cuboid then the surface area of that cuboid is
 a) $11 a^2$ b) $9a^2$ c) $14a^2$ d) $7a^2$
- Q. 51 The number of circular plates each of radius 7 cm and thickness 0.5 cm are placed one above the other to form a Solid Right circular cylinder of volume 1925 cm^3 . Then the number of circular plates required will be
 a) 25 b) 50 c) 12 d) 75
- Q. 52 If the volume of a hemisphere is $18 \pi \text{ cm}^3$ then its radius is
 a) 12 cm b) 3 cm c) 6 cm d) 4.5 cm
- Q. 53 A solid sphere with total surface area 48 cm^2 is bisected into two hemispheres, then the total surface area of any one of the hemispheres is
 a) 48 cm^2 b) 60 cm^2 c) 24 cm^2 d) 36 cm^2
- Q. 54 The least number of coins of diameter 2.5 cm and height 0.3 cm which are to be melted to form a solid cylinder of radius 3 cm and height 5 cm then the required number of coins is
 a) 96 b) 102 c) 92 d) 104
- Q. 55 The total surface area of a right circular cone of slant height 13 cm is $90 \pi \text{ cm}^2$ then the radius of the cone is
 a) $r = 7$ b) $r = 3$ c) $r = 5$ d) $r = 9$
- Q. 56 The sum of the radius of the base and the height of a solid cylinder is 37 cm. If the total surface area of the solid cylinder is 1628 cm^2 . Then the volume of the cylinder is
 a) 35800 cm^3 b) 4620 cm^3 c) 4260 cm^3 d) 4920 cm^3

- Q. 57 The median of the following data is

Midvalue	15	25	35	45	55	65
Frequency	4	28	15	20	17	16

- a) 30 b) 31.5 c) 40 d) 41.5
- Q. 58 The following table gives the marks obtained by students in Mathematics Test.
 Then the median of marks is
- | | | | | | | | | | | |
|----------------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 |
| No of students | 2 | 5 | 10 | 8 | 15 | 20 | 30 | 15 | 10 | 5 |
- a) 55 b) 60 c) 65 d) 58
- Q. 59 For the following grouped frequency distribution, state the modal class and the mode

Weight in kg	60-62	63-65	66-68	69-71	72-74
Number of workers	5	18	42	27	8

- a) Modal class 65.5-68.5 and mode 67.346 b) Modal class 63.5-66.5 and mode 65
 c) Modal class 69-71 and mode 69.346 d) Modal class 63.5-68.5 and mode 66.546

Q. 60 The mean of the following distribution is 78. Then missing frequencies corresponding to class 80-90 and 90-100 respectively will be

Class Interval	50-60	60-70	70-80	80-90	90-100	Total
Frequencies	8	6	12	$4x - 1$	$2y + 3$	50

- a) 11 & 13 b) 12 & 14 c) 10 & 12 d) 13 & 14

Q. 61 The mean of the following frequency distribution is

Class Interval	0-6	6-12	12-18	18-24	24-30
Frequency	7	5	10	12	6

- a) 12.5 b) 16.5 c) 17.5 d) 15.75

Q. 62 If the median of the given data

24, 25, 26, $x + 2$, $x + 3$, 30, 31, 34 is 27.5 then the value of x is

- a) 27 b) 28 c) 25 d) 30

Q. 63 The mode of 5, 2, 7, 3, 2, 2, 5, 5, 2, 3, 4, 5, 5, 7, 7 is

- a) 3 b) 7 c) 5 d) 2

Q. 64 A die is thrown once. Then the probability of getting an odd number is

- a) $\frac{1}{3}$ b) $\frac{1}{4}$ c) $\frac{1}{5}$ d) $\frac{1}{2}$

Q. 65 If a die is thrown once, the probability of getting a perfect square is

- a) $\frac{1}{3}$ b) $\frac{1}{4}$ c) $\frac{2}{3}$ d) $\frac{3}{4}$

Q. 66 One card is drawn from a well shuffled deck of 52 cards. Then the probability of getting a queen of red suit is

- a) $\frac{1}{26}$ b) $\frac{1}{21}$ c) $\frac{1}{14}$ d) $\frac{1}{22}$

Q. 67 A bag contains 3 red balls and some black balls. If the probability of drawing a black ball is double than that of a red ball. Then the number of black balls in the bag will be

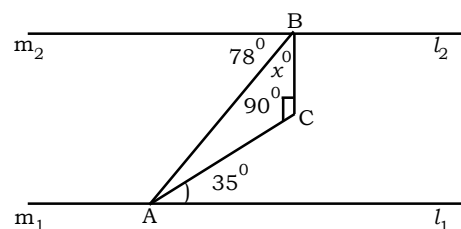
- a) 2 b) 4 c) 6 d) 5

Q. 68 If two coins are tossed simultaneously then the probability of getting one head is

- a) $\frac{3}{8}$ b) $\frac{1}{8}$ c) $\frac{1}{2}$ d) $\frac{5}{8}$

Q. 69 In the fig. $\angle C = 90^\circ$, $\angle CBA = x^\circ$, $\angle ABm_2 = 78^\circ$, $\angle CA l_1 = 35^\circ$.

Then for which value of x , l_1 is parallel to l_2



- a) 37° b) 43° c) 45° d) 47°

(7)

Q. 70 The figure formed by joining the mid-points of adjacent sides of a Rhombus is a
a) square b) rectangle c) trapezium d) none of these

Q. 71 If $\frac{3 + \sqrt{2}}{3 - \sqrt{2}} = a + b\sqrt{2}$ where a and b are rational numbers then

- a) $a = \frac{9}{7}$ $b = \frac{2}{7}$ b) $a = \frac{11}{7}$ $b = \frac{6}{7}$ c) $a = \frac{3}{7}$ $b = \frac{5}{7}$ d) $a = \frac{5}{7}$ $b = \frac{1}{7}$

Q. 72 If $a + b = 8$ and $ab = 6$ then the value of $a^3 + b^3 =$

- a) 260 b) 360 c) 368 d) 430

Q. 73 If $x = \frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}}$ and $y = \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$ the the value of $x^2 + xy + y^2 =$

- a) 101 b) 99 c) 98 d) 102

Q. 74 $\left(\frac{243}{32}\right)^{-\frac{4}{5}} =$

- a) $\frac{8}{9}$ b) $\frac{16}{81}$ c) $\frac{4}{9}$ d) $\frac{16}{9}$

Q. 75 The value of $\left[8^{-\frac{4}{3}} + 2^{-2}\right]^{\frac{1}{2}}$ is

- a) $\frac{1}{2}$ b) 2 c) $\frac{1}{4}$ d) 4