Set - 1

Q1. If $\tan 3\theta = \sqrt{3}$, then $\frac{\theta}{2}$ equals :
(a) 60°
(b) 30°
(c) 20°
(d) 10°

S1. Ans. (d)

Q2. If x is the LCM of 4,6,8 and y is the LCM of 3,5,7 and p is the LCM of x and y, then which of the following is true?
(a) $p = 35x$
(b) $p = 4y$
(c) $p = 8x$
(d) $p = 16y$

S2. Ans. (a)

Q3. The value of ' k ' for which the system of linear equations $6x + y = 3k$ and $36x + 6y = 3$ have infinitely many solutions is :
(a) 6
(b) $\frac{1}{6}$
(c) $\frac{1}{2}$
(d) $\frac{1}{3}$

S3. Ans. (b)

Q4. If α and β are the zeroes of the polynomial $p(x) = x^2 - ax - b$, then the value of $(\alpha + \beta + \alpha\beta)$ is equal to :
(a) $a + b$
(b) $-a - b$
(c) $a - b$
(d) $-a + b$

S4. Ans. (c)

Q5. If $\frac{x}{12} - \frac{3}{x} = 0$, then the values of x are :
(a) ± 6
(b) ± 4
(c) ± 12
(d) ± 3

S5. Ans. (a)

Q6. The line represented by $\frac{x}{4} + \frac{y}{6} = 1$, intersects x-axis and y-axis respectively at P and Q. The coordinates of the mid-point of line segment PQ are :
(a) (2,3)
(b) (3,2)

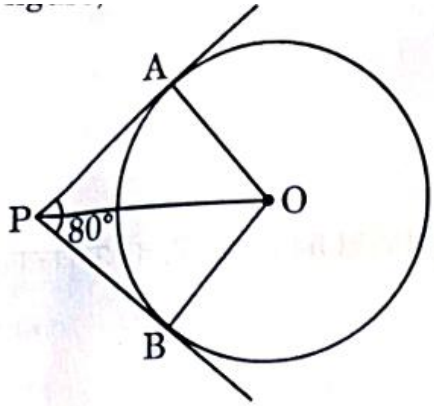
(c) (2,0)
(d) (0,3)

S6. Ans. (a)

Q7. Two of the vertices of △ PQR are P(−1,5) and Q(5,2). The coordinates of a point which divides PQ in the ratio 2:1 are :
(a) (3, −3)
(b) (5,5)
(c) (3,3)
(d) (5,1)

S7. Ans. (c)

Q8. If tangents PA and PB drawn from an external point *P* to the circle with centre *O* are inclined to each other at an angle of 80° as shown in the given figure, then the measure of ∠POA is :



(a) 40°

(b) 50°
(c) 60°
(d) 80°

S8. Ans. (b)

Q9. $(\cot\theta + \tan\theta)$ equals :
(a) $\text{cosec}\,\theta\sec\theta$
(b) $\sin\theta\sec\theta$
(c) $\cos\theta\tan\theta$
(d) $\sin\theta\cos\theta$

S9. Ans. (a)

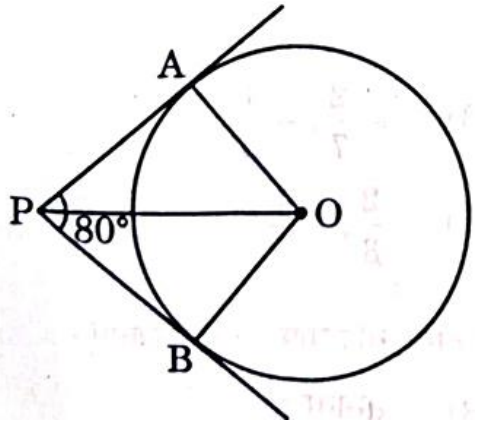
Q10. If in two triangles △ DEF and △ PQR, ∠D = ∠Q and ∠R = ∠E, then which of the following is not true?
(a) $\frac{\text{DE}}{\text{QR}} = \frac{\text{DF}}{\text{PQ}}$
(b) $\frac{EF}{PR} = \frac{DF}{PQ}$

(c) $\frac{EF}{RP} = \frac{DE}{QR}$
(d) $\frac{DE}{PQ} = \frac{EF}{RP}$

S10. Ans. (d)

Set – 2:

Q1. If tangents PA and PB drawn from an external point P to the circle with centre O are inclined to each other at an angle of 80° as shown in the given figure, then the measure of ∠POA is :



(a) 40°
(b) 50°

(c) 60°
(d) 80°

S1. Ans. (b)

Q2. If the mean of $2,9, x+6, 2x+3, 5, 10, 5$ is 7 , then the value of x is :
(a) 9
(b) 6
(c) 5
(d) 3

S2. Ans. (d)

Q3. If the volumes of two cubes are in the ratio 8: 125, then the ratio of their surface areas is :
(a) 8: 125
(b) 4: 25
(c) 2: 5
(d) 16: 25

S3. Ans. (b)

Q4. Two of the vertices of $\triangle PQR$ are $P(-1,5)$ and $Q(5,2)$. The coordinates of a point which divides PQ in the ratio 2: 1 are :
(a) $(3, -3)$
(b) $(5,5)$

(c) (3,3)
(d) (5,1)

S4. Ans. (c)

Q5. If $\sin 4\theta = \frac{\sqrt{3}}{2}$, then $\frac{\theta}{3}$ equals :
(a) 60°
(b) 20°
(c) 15°
(d) 5°

S5. Ans. (d)

Q6. Zeroes of the polynomial $p(y) = 7y^2 - \frac{11}{3}y - \frac{2}{3}$ are :
(a) $-\frac{2}{3}, -\frac{1}{7}$
(b) $-\frac{2}{7}, -\frac{1}{3}$
(c) $\frac{2}{3}, \frac{1}{7}$
(d) $\frac{2}{3}, -\frac{1}{7}$

S6. Ans. (d)

Q7. A system of two linear equations in two variables is inconsistent, if the lines in the graph are:
(a) coincident
(b) parallel
(c) intersecting at one point
(d) intersecting at right angles

S7. Ans. (b)

Q8. $AOBC$ is a rectangle whose three vertices are $A(0,2)$, $O(0,0)$ and $B(4,0)$. The square of the length of its diagonal is equal to :
(a) 36
(b) 20
(c) 16
(d) 4

S8. Ans. (b)

Q9. If x is the LCM of 4,6,8 and y is the LCM of 3,5,7 and p is the LCM of x and y, then which of the following is true ?
(a) $p = 35x$
(b) $p = 4y$
(c) p = 8x
(d) $p = 16y$

S9. Ans. (a)

Q10. A die is thrown once. The probability of getting a number which is not a factor of 36 , is :
(a) $\frac{1}{2}$
(b) $\frac{2}{3}$
(c)
(d) $\frac{5}{6}$

S10. Ans. (c)

Set – 3:

Q1. The diameter of a wheel is 63 cm . The distance travelled by the wheel in 100 revolutions is :
(a) 99 m
(b) 198 m
(c) 63 m
(d) 136 m

S1. Ans. (b)

Q2. The mean of seven observations is 17 . If the mean of the first four observations is 15 and that of the last four observations is 18 , then the fourth observation is :
(a) 14
(b) 13
(c) 12
(d) 10

S2. Ans. (b)

Q3. The distance of the point (4,0) from x-axis is :
(a) 4 units
(b) 16 units
(c) 0 units
(d) $4\sqrt{2}$ units

S3. Ans. (c)

Q4. If α and β are zeroes of the polynomial $p(x) = \mathrm{kx}^2 - 30\mathrm{x} + 45\mathrm{k}$ and $\alpha + \beta = \alpha\beta$, then the value of ' k ' is :
(a) $-\frac{2}{3}$
(b) $-\frac{3}{2}$
(c) $\frac{3}{2}$
(d) $\frac{2}{3}$

S4. Ans. (d)

Q5. The radii ' r ' of a sphere and that of the base of a cone are same. If their volumes are also same, then the height of the cone is :
(a) r
(b) 2 r
(c) 3 r
(d) 4 r

S5. Ans. (d)

Q6. If in a lottery, there are 10 prizes and 30 blanks, then the probability of winning a prize is :
(a) $\frac{1}{6}$
(b) $\frac{1}{3}$
(c) $\frac{3}{4}$
(d) $\frac{2}{3}$

S6. Ans. (a)

Q7. If $\tan 3\theta = \sqrt{3}$, then $\frac{\theta}{2}$ equals :
(a) 60°
(b) 30°
(c) 20°
(d) 10°

S7. Ans. (d)

Q8. If in two triangles $\triangle$ DEF and $\triangle$ PQR, $\angle D = \angle Q$ and $\angle R = \angle E$, then which of the following is not true?
(a) $\frac{DE}{QR} = \frac{DF}{PQ}$
(b) $\frac{EF}{PR} = \frac{DF}{PQ}$
(c) $\frac{EF}{RP} = \frac{DE}{QR}$
(d) $\frac{DE}{PQ} = \frac{EF}{RP}$

S8. Ans. (d)