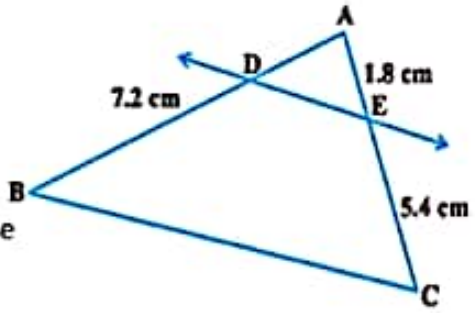
MCQ WORKSHEET-I
CLASS X : CHAPTER - 6
TRIANGLES

1. If in triangle ABC and DEF, $\frac{AB}{DE}=\frac{BC}{FD}$, then they will be similar when
   (a) $\angle B=\angle E$ (b) $\angle A=\angle D$ (c) $\angle B=\angle D$ (d) $\angle A=\angle F$

2. It is given that $\Delta ABC \sim \Delta PQR$ with $\frac{BC}{QR}=\frac{1}{3}$, then $\frac{ar(\Delta ABC)}{ar(\Delta PQR)}$ is equal to
   (a) 9 (b) 3 (c) $\frac{1}{3}$ (d) $\frac{1}{9}$

3. In ΔABC, DE || BC and AD = 4cm, AB = 9cm. AC = 13.5 cm then the value of EC is
   (a) 6 cm (b) 7.5 cm (c) 9 cm (d) none of these



4. In figure DE || BC then the value of AD is
   (a) 2 cm (b) 2.4 cm (c) 3 cm (d) none of the above

5. ABC and BDE are two equilateral triangles such that $BD=\frac{2}{3}BC$. The ratio of the areas of triangles ABC and BDE are
   (a) 2 : 3 (b) 3 : 2 (c) 4 : 9 (d) 9 : 4

6. A ladder is placed against a wall such that its foot is at distance of 2.5 m from the wall and its top reaches a window 6 m above the ground. The length of the ladder is
   (a) 6.5 m (b) 7.5 m (c) 8.5 m (d) 9.5 m

7. If the corresponding sides of two similar triangles are in the ratio 4 : 9, then the areas of these triangles are in the ratio is
   (a) 2 : 3 (b) 3 : 2 (c) 81 : 16 (d) 16 : 81

8. If $\Delta ABC \sim \Delta PQR$, BC = 8 cm and QR = 6 cm, the ratio of the areas of Δ ABC and Δ PQR is
   (a) 8 : 6 (b) 6 : 8 (c) 64 : 36 (d) 9 : 16

9. If $\Delta ABC \sim \Delta PQR$, area of Δ ABC = 81cm^2, area of Δ PQR = 144cm^2 and QR = 6 cm, then length of BC is
   (a) 4 cm (b) 4.5 cm (c) 9 cm (d) 12 cm

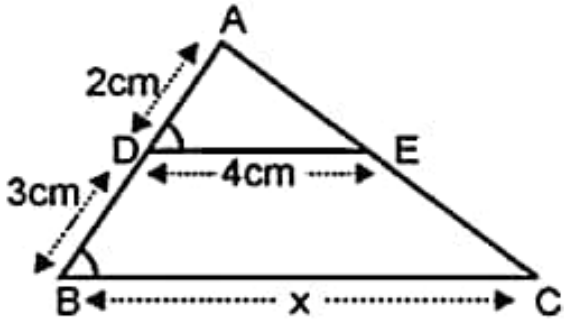
10. Sides of triangles are given below. Which of these is a right triangle?
    (a) 7 cm, 5 cm, 24 cm (b) 34 cm, 30 cm, 16 cm
    (c) 4 cm, 3 cm, 7 cm (d) 8 cm, 12 cm, 14 cm

11. If a ladder 10 m long reaches a window 8 m above the ground, then the distance of the foot of the ladder from the base of the wall is
    (a) 18 m (b) 8 m (c) 6 m (d) 4 m

12. A girl walks 200 towards East and the she walks 150m towards North. The distance of the girl from the starting point is
    (a) 350m (b) 250m (c) 300m (d) 225m

MCQ WORKSHEET-II
CLASS X : CHAPTER - 6
TRIANGLES

1. In the given figure, if DE || BC, then x equals
(a) 6 cm (b) 10 cm (c) 8 cm (d) 12.5 cm

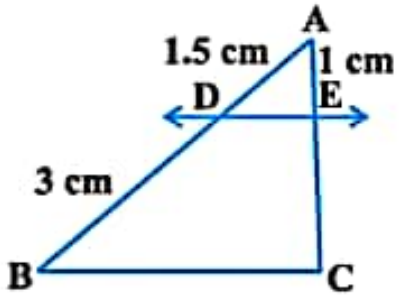


2. All _____triangles are similar.
(a) isosceles (b) equilateral (c) scalene
(d) right angled

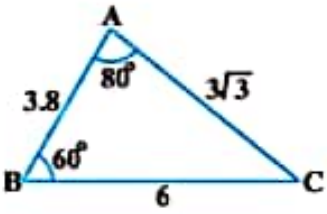
3. All circles are _____
(a) congruent (b) similar (c) not similar
(d) none of these

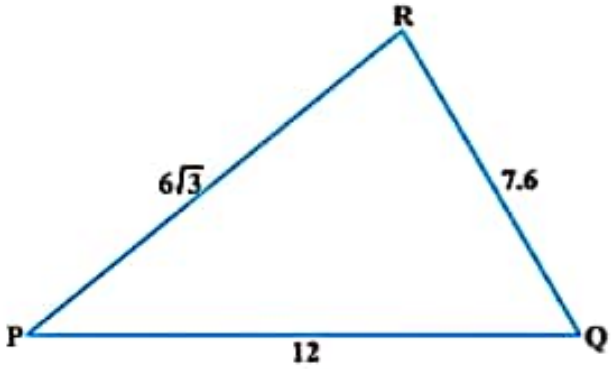
4. All squares are _____
(a) congruent (b) similar (c) not similar (d) none of these

5. In the given fig DE || BC then the value of EC is
(a) 1 cm (b) 2 cm (c) 3 cm (d) 4 cm



6. In the given below figure, the value of $\angle P$ is
(a) 60^0 (b) 80^0 (c) 40^0 (d) 100^0





7. A girl of height 90 cm is walking away from the base of a lamp-post at a speed of 1.2 m/s. If the lamp is 3.6 m above the ground, then the length of her shadow after 4 seconds.
(a) 1.2 m (b) 1.6 m (c) 2 m (d) none of these

8. A vertical pole of length 6 m casts a shadow 4 m long on the ground and at the same time a tower casts a shadow 28 m long. Find the height of the tower.
(a) 42 m (b) 48 m (c) 54 m (d) none of these

9. $\Delta ABC \sim \Delta DEF$ and their areas be, respectively, 64 cm^2 and 121 cm^2. If EF = 15.4 cm, the value of BC is.
(a) 11.2 cm (b) 15.4 cm (c) 6.4 cm (d) none of these

10. ABC and BDE are two equilateral triangles such that D is the midpoint of BC. Ratio of the areas of triangles ABC and BDE is
(a) 2 : 1 (b) 1 : 2 (c) 4 : 1 (d) 1 : 4

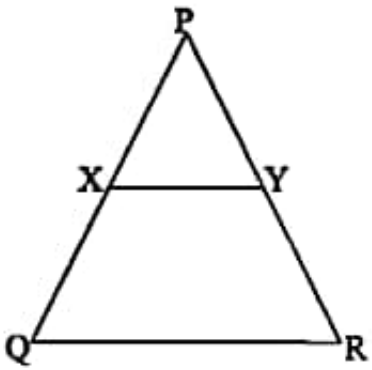
11. Areas of two similar triangles are in the ratio 4 : 9. Sides of these triangles are in the ratio
(a) 2 : 3 (b) 4 : 9 (c) 81 : 16 (d) 16 : 81

MCQ WORKSHEET-III

CLASS X : CHAPTER - 6

TRIANGLES

1. In the following fig. XY ∥ QR and $\frac{PX}{XQ} = \frac{PY}{YR} = \frac{1}{2}$, then



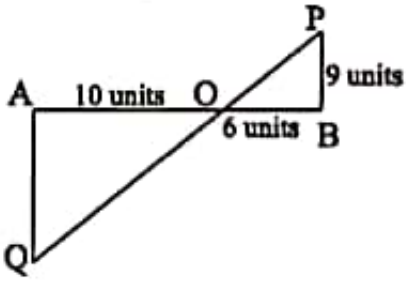
(*i*) XY = QR

(*ii*) $XY = \frac{1}{3}QR$

(*iii*) $XY^2 = QR^2$

(*iv*) $XY = \frac{1}{2}QR$

2. In the following fig QA ⊥ AB and PB ⊥ AB, then AQ is:



(i) 15 units (ii) 8 units (iii) 5 units (iv) 9 units

3. The ratio of the areas of two similar triangles is equal to the:

(i) ratio of their corresponding sides

(ii) ratio of their corresponding attitudes

(iii) ratio of the squares of their corresponding sides

(iv) ratio of the squares of their perimeter

4. The areas of two similar triangles are 144 cm^2 and 81 cm^2. If one median of the first triangle is 16 cm, length of corresponding median of the second triangle is:

(i) 9 cm (ii) 27 cm (iii) 12 cm (iv) 16 cm

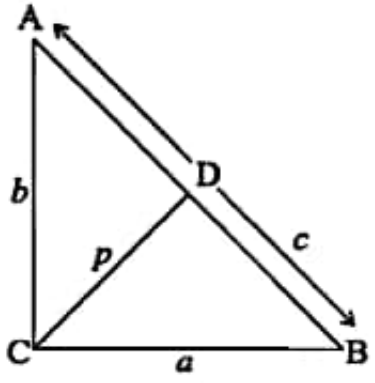
5. In a right triangle ABC, in which ∠C = 90° and CD ⊥AB. If BC = *a*, CA = *b*, AB = *c* and CD = *p*.

(*i*) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$

(*ii*) $\frac{1}{p^2} \neq \frac{1}{a^2} + \frac{1}{b^2}$

(*iii*) $\frac{1}{p^2} < \frac{1}{a^2} + \frac{1}{b^2}$

(*iv*) $\frac{1}{p^2} > \frac{1}{a^2} + \frac{1}{b^2}$



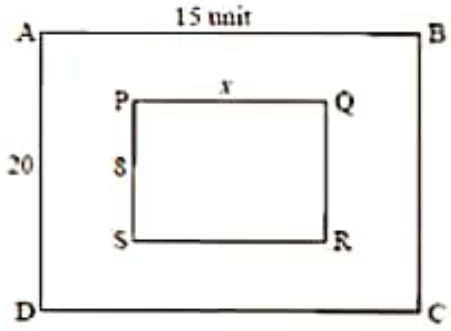
6. Given Quad. ABCD ~ Quad PQRS then x is:

(i) 13 units

(ii) 12 units

(iii) 6 units

(iv) 15 units



7. If $\Delta ABC \sim \Delta DEF$, ar($\Delta DEF$) = 100 cm^2 and AB/DE = 1/2 then ar(ΔABC) is:

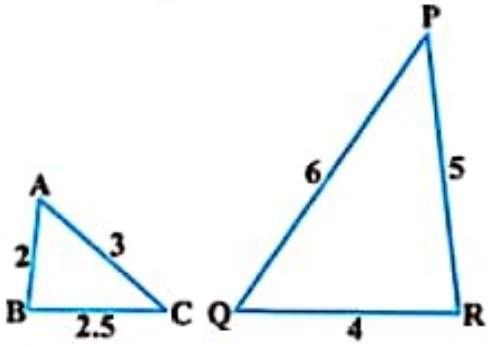
(i) 50 cm^2 (ii) 25 cm^2 (iii) 4 cm^2 (iv) None of the above.

8. If the three sides of a triangle are a, $\sqrt{3}a$, $\sqrt{2}a$, then the measure of the angle opposite to the longest side is:

(i) 45° (ii) 30° (iii) 60° (iv) 90°

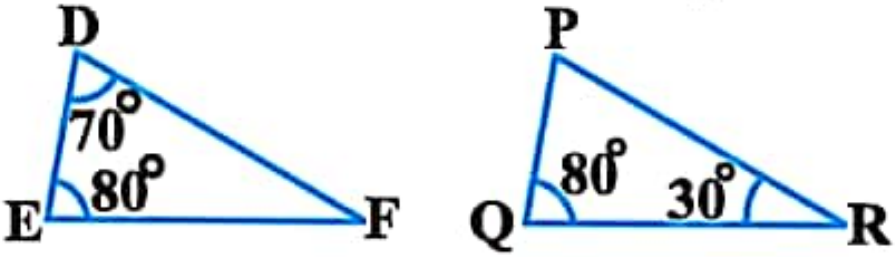
9. The similarity criterion used for the similarity of the given triangles shown in fig (iii) is

(a) AAA (b) SSS (c) SAS (d) AA



10. The similarity criterion used for the similarity of the given triangles shown in fig (iv) is

(a) AAA (b) SSS (c) SAS (d) AA



MCQ WORKSHEET-IV
CLASS X : CHAPTER - 6
TRIANGLES

1. A vertical pole of length 20 m casts a shadow 10 m long on the ground and at the same time a tower casts a shadow 50 m long, then the height of the tower.
   (a) 100 m (b) 120 m (c) 25 m (d) none of these

2. The areas of two similar triangles are in the ratio 4 : 9. The corresponding sides of these triangles are in the ratio
   (a) 2 : 3 (b) 4 : 9 (c) 81 : 16 (d) 16 : 81

3. The areas of two similar triangles ΔABC and ΔDEF are 144 cm^2 and 81 cm^2, respectively. If the longest side of larger ΔABC be 36 cm, then the longest side of the similar triangle ΔDEF is
   (a) 20 cm (b) 26 cm (c) 27 cm (d) 30 cm

4. The areas of two similar triangles are in respectively 9 cm^2 and 16 cm^2. The ratio of their corresponding sides is
   (a) 2 : 3 (b) 3 : 4 (c) 4 : 3 (d) 4 : 5

5. Two isosceles triangles have equal angles and their areas are in the ratio 16 : 25. The ratio of their corresponding heights is
   (a) 3 : 2 (b) 5 : 4 (c) 5 : 7 (d) 4 : 5

6. If ΔABC and ΔDEF are similar such that 2AB = DE and BC = 8 cm, then EF =
   (a) 16 cm (b) 112 cm (c) 8 cm (d) 4 cm

7. XY is drawn parallel to the base BC of a ΔABC cutting AB at X and AC at Y. If AB = 4BX and YC = 2 cm, then AY =
   (a) 2 cm (b) 6 cm (c) 8 cm (d) 4 cm

8. Two poles of height 6 m and 11 m stand vertically upright on a plane ground. If the distance between their foot is 12 m, the distance between their tops is
   (a) 14 cm (b) 12 cm (c) 13 cm (d) 11 cm

9. If D, E, F are midpoints of sides BC, CA and AB respectively of ΔABC, then the ratio of the areas of triangles DEF and ABC is
   (a) 2 : 3 (b) 1 : 4 (c) 1 : 2 (d) 4 : 5

10. If ΔABC and ΔDEF are two triangles such that $\frac{AB}{DE}=\frac{BC}{EF}=\frac{CA}{FD}=\frac{2}{5}$, then $\frac{ar(\Delta ABC)}{ar(\Delta DEF)}=$
    (a) 2 : 5 (b) 4 : 25 (c) 4 : 15 (d) 8 : 125

11. In triangles ABC and DEF, $\angle A = \angle E = 40^0$, AB : ED = AC : EF and $\angle F = 65^0$, then $\angle B$ =
    (a) 35^0 (b) 65^0 (c) 75^0 (d) 85^0

12. If ABC and DEF are similar triangles such that $\angle A = 47^0$ and $\angle E = 83^0$, then $\angle C$=
    (a) 50^0 (b) 60^0 (c) 70^0 (d) 80^0

MCQ WORKSHEET-I
CLASS X: CHAPTER – 7
COORDINATE GEOMETRY

1. The points A(0, –2), B(3, 1), C(0, 4) and D(–3, 1) are the vertices of a
   (a) parallelogram (b) rectangle (c) square (d) rhombus

2. If A(3, 8), B(4, –2) and C(5, –1) are the vertices of ΔABC. Then, its area is
   (a) $28\frac{1}{2}$ sq. units (b) $37\frac{1}{2}$ sq. units (c) 57 sq. units (d) 75 sq. units

3. The points A(0, 6), B(–5, 3) and C(3, 1) are the vertices of a triangle which is
   (a) isosceles (b) equilateral (c) scalene (d) right angled

4. Two vertices of ΔABC are A(–1, 4) and B(5, 2) and its centroid is G(0, –3). The coordinate of C is
   (a) (4, 3) (b) (4, 15) (c) (–4, –15) (d) (–15, –4)

5. The coordinates of the centroid of ΔABC with vertices A(–1, 0), B(5, –2) and C(8, 2) is
   (a) (12, 0) (b) (6, 0) (c) (0, 6) (d) (4, 0)

6. If the points A(2, 3), B(5, k) and C(6, 7) are collinear, then the value of k is
   (a) 4 (b) 6 (c) $\frac{-3}{2}$ (d) $\frac{11}{4}$

7. If P(–1, 1) is the middle point of the line segment joining A(–3, b) and B(1, b + 4) then the value of b is
   (a) 1 (b) –1 (c) 2 (d) 0

8. y–axis divides the join of P(–4, 2) and Q(8, 3) in the ratio
   (a) 3 : 1 (b) 1 : 3 (c) 2 : 1 (d) 1 : 2

9. x–axis divides the join of A(2, –3) and B(5, 6) in the ratio
   (a) 3 : 5 (b) 2 : 3 (c) 2 : 1 (d) 1 : 2

10. The point P(1, 2) divides the join of A(–2, 1) and B(7, 4) are in the ratio of
    (a) 3 : 2 (b) 2 : 3 (c) 2 : 1 (d) 1 : 2

11. A point P divides the join of A(5, –2) and B(9, 6) are in the ratio 3 : 1. The coordinates of P are
    (a) (4, 7) (b) (8, 4) (c) $(\frac{11}{2}, 5)$ (d) (12, 8)

12. What point on x – axis is equidistant from the points A(7, 6) and B(–3, 4)?
    (a) (0, 4) (b) (–4, 0) (c) (3, 0) (d) (0, 3)

13. The distance of the point P(4, –3) from the origin is
    (a) 1 unit (b) 7 units (c) 5 units (d) 3 units

14. The distance between the points A(2, –3) and B(2, 2) is
    (a) 2 units (b) 4 units (c) 5 units (d) 3 units

15. Find the area of the triangle whose vertices are A(1, 2), B(–2, 3) and C(–3, –4)
    (a) 11sq. units (b) 22 sq. units (c) 7 sq. units (d) 6.5 sq. units

MCQ WORKSHEET-II
CLASS X: CHAPTER – 7
COORDINATE GEOMETRY

1. Find the area of the triangle whose vertices are A(2, 4), B(–3, 7) and C(–4, 5)
   (a) 11sq. units (b) 22 sq. units (c) 7 sq. units (d) 6.5 sq. units

2. Find the area of the triangle whose vertices are A(10, –6), B(2, 5) and C(–1, 3)
   (a) 12.5 sq. units (b) 24.5 sq. units (c) 7 sq. units (d) 6.5 sq. units

3. Find the area of the triangle whose vertices are A(4, 4), B(3, –16) and C(3, –2)
   (a) 12.5 sq. units (b) 24.5 sq. units (c) 7 sq. units (d) 6.5 sq. units

4. For what value of x are the points A(–3, 12), B(7, 6) and C(x, 9) collinear?
   (a) 1 (b) –1 (c) 2 (d) –2

5. For what value of y are the points A(1, 4), B(3, y) and C(–3, 16) collinear?
   (a) 1 (b) –1 (c) 2 (d) –2

6. Find the value of p for which the points A(–1, 3), B(2, p) and C(5, –1) collinear?
   (a) 1 (b) –1 (c) 2 (d) –2

7. What is the midpoint of a line with endpoints (–3, 4) and (10, –5)?
   (a) (–13, –9) (b) (–6.5, –4.5) (c) (3.5, –0.5) (d) none of these

8. A straight line is drawn joining the points (3, 4) and (5,6). If the line is extended, the ordinate of the point on the line, whose abscissa is –1 is
   (a) 1 (b) –1 (c) 2 (d) 0

9. If the distance between the points (8, p) and (4, 3) is 5 then value of p is
   (a) 6 (b) 0 (c) both (a) and (b) (d) none of these

10. The fourth vertex of the rectangle whose three vertices taken in order are (4,1), (7, 4), (13, –2) is
    (a) (10, –5) (b) (10, 5) (c) (8, 3) (d) (8, –3)

11. If four vertices of a parallelogram taken in order are (–3, –1), (a, b), (3, 3) and (4, 3). Then a : b =
    (a) 1 : 4 (b) 4 : 1 (c) 1 : 2 (d) 2 : 1

12. Area of the triangle formed by (1, – 4), (3, – 2) and (– 3,16) is
    (a) 40 sq. units (b) 48 sq. units (c) 24 sq. units (d) none of these

13. The points (2, 5), (4, - 1), (6, - 7) are vertices of an _____ triangle
    (a) isosceles (b) equilateral (c) scalene (d) right angled

14. The area of triangle formed by the points (p, 2 - 2p), (1-p,2p) and (-4-p, 6- 2p) is 70 sq. units. How many integral value of p are possible ?
    (a) 2 (b) 3 (c) 4 (d) none of these

15. If the origin is the mid-point of the line segment joined by the points (2,3) and (x,y), then the value of (x,y) is
    (a) (2, –3) (b) (2, 3) (c) (–2, 3) (d) (–2, –3)

MCQ WORKSHEET-III
CLASS X: CHAPTER – 7
COORDINATE GEOMETRY

1. The distance of the point P(2, 3) from the x-axis is:
   (a) 2 (b) 3 (c) 1 (d) 5

2. The distance between the points A(0, 6) and B(0, -2) is:
   (a) 2 (b) 6 (c) 4 (d) 8

3. The distance of the point P(-6, 8) from the origin is:
   (a) 8 (b) 27 (c) 10 (d) 6

4. The distance between the points (0, 5) and (-5, 0) is:
   (a) 5 (b) 52 (c) 25 (d) 10

5. AOBC is a rectangle whose three vertices are A(0, 3), O(0, 0) and B(5, 0). The length of its diagonal is:
   (a) 5 (b) 3 (c) 34 (d) 4

6. The perimeter of a triangle with vertices (0, 4), (0, 0) and (3, 0) is:
   (a) 5 (b) 12 (c) 11 (d) 7 + 5

7. The area of a triangle with vertices A(3, 0), B(7, 0) and C(8, 4) is:
   (a) 14 (b) 28 (c) 8 (d) 6

8. The points (–4, 0), (4, 0), (0, 3) are the vertices of a :
   (a) Right triangle (b) Isosceles triangle (c) Equilateral triangle (d) Scalene triangle

9. Point on x – axis has coordinates:
   (a) (a, 0) (b) (0, a) (c) (–a, a) (d) (a, –a)

10. Point on y – axis has coordinates:
    (a) (–a, b) (b) (a, 0) (c) (0, b) (d) (–a, –b)

11. Line formed by joining (- 1,1) and (5, 7) is divided by a line x + y = 4 in the ratio of
    (a) 1 : 4 (b) 1 : 3 (c) 1 : 2 (d) 3 : 4

12. If the area of the triangle with vertices (x, 0), (1,1) and (0, 2) is 4 square units, then a value of x is
    (a) –2 (b) –4 (c) –6 (d) 8

MCQ WORKSHEET-IV
CLASS X: CHAPTER – 7
COORDINATE GEOMETRY

1. Point A(–5, 6) is at a distance of:
   (a) 61 units from the origin (b) 11 units from the origin
   (c) $\sqrt{61}$ units from the origin (d) $\sqrt{11}$ units from the origin

2. If the points (1, x), (5, 2) and (9, 5) are collinear then the value of x is
   (a) $\frac{5}{2}$ (b) $\frac{-5}{2}$ (c) –1 (d) 1

3. The end points of diameter of circle are (2, 4) and (–3, –1). The radius of the circle us
   (a) $\frac{5\sqrt{2}}{2}$ (b) $5\sqrt{2}$ (c) $3\sqrt{2}$ (d) $\frac{\pm 5\sqrt{2}}{2}$

4. The ratio in which x – axis divides the line segment joining the points (5, 4) and (2, –3) is:
   (a) 5 : 2 (b) 3 : 4 (c) 2 : 5 (d) 4 : 3

5. The point which divides the line segment joining the points (7, –6) and (3, 4) in ratio 1:2 internally lies in the
   (a) I quadrant (b) II quadrant (c) III quadrant (d) IV quadrant

6. The point which lies on the perpendicular bisector of the line segment joining the points A(–2, –5) and B(2, 5) is:
   (a) (0, 0) (b) (0, 2) (c) (2, 0) (d) (–2, 0)

7. The fourth vertex D of a parallelogram ABCD whose three vertices are A(-2, 3), B(6, 7) and C(8, 3) is:
   (a) (0, 1) (b) (0, -1) (c) (-1, 0) (d) (1, 0)

8. If the point P(2, 1) lies on the line segment joining points A(4, 2) and B(8, 4), then
   (a) AP = $\frac{1}{3}$AB (b) AP = PB (c) PB = $\frac{1}{3}$AB (d) AP = $\frac{1}{2}$AB

9. Three vertices of a parallelogram taken in order are (- 1, - 6), (2, - 5) and (7, 2). The fourth vertex is
   (a) (1, 4) (b) (1, 1) (c) (4, 4) (d) (4, 1)

10. If A and B are the points (- 3, 4) and (2, 1) respectively, then the coordinates of the points on AB produced such that AC = 2BC are
    (a) (2, 4) (b) (3, 7) (c) (7, –2) (d) none of these

11. Distance of the point (4, a) from x-axis is half its distance from y-axis then a =
    (a) 2 (b) 8 (c) 4 (d) 6

12. A triangle is formed by the points 0(0, 0), A(5,0) and B(0,5). The number of points having integral coordinates (both x and y) and strictly inside the triangle is
    (a) 10 (b) 17 (c) 16 (d) 6

13. If P(1, 2), Q(4,6), R(5,7) and S(a, b) are the vertices of a parallelogram PQRS then
(a) a = 2, b = 4 (b) a = 3, b = 4 (c) a = 2, b = 3 (d) a = 3, b = 5

14. The number of points on x-axis which are at a distance of 2 units from (2, 4) is
(a) 2 (b) 1 (c) 3 (d) 0

15. The distance of the point (h, k) from x-axis is
(a) h (b) k (c) | h | (d) | k |

16. The vertices of a triangle are (0, 0), (3, 0) and (0, 4). Its orthocentre is at
(a) (0, 3) (b) (4, 0) (c) (0, 0) (d) (3, 4)

17. The area of the triangle with vertices at the points (a, b + c), (b, c + a) and (c, a + b) is
(a) a + b + c (b) a + b – c (c) a – b + c (d) 0

18. If the segment joining the points (a, b) and (c, d) subtends a right angle at the origin, then
(a) ac – bd = 0 (b) ac + bd = 0 (c) ab – cd = 0 (d) ab + cd = 0

19. The distance of A(5, -12) from the origin is
(a) 12 (b) 11 (c) 13 (d) 10

20. Find the ordinate of a point whose abscissa is 10 and which is at a distance of 10 units from the point P(2, -3).
(a) 3 (b) –9 (c) both (a) or (b) (d) none of these

MCQ WORKSHEET-I

CLASS X: CHAPTER - 8

INTRODUCTION TO TRIGONOMETRY

1. In ΔOPQ, right-angled at P, OP = 7 cm and OQ – PQ = 1 cm, then the values of sin Q.

(a) $\frac{7}{25}$ (b) $\frac{24}{25}$ (c) 1 (d) none of the these

2. If $\sin A = \frac{24}{25}$, then the value of cosA is

(a) $\frac{7}{25}$ (b) $\frac{24}{25}$ (c) 1 (d) none of the these

3. In ΔABC, right-angled at B, AB = 5 cm and $\angle ACB = 30°$ then the length of the side BC is

(a) $5\sqrt{3}$ (b) $2\sqrt{3}$ (c) 10 cm (d) none of these

4. In ΔABC, right-angled at B, AB = 5 cm and $\angle ACB = 30°$ then the length of the side AC is

(a) $5\sqrt{3}$ (b) $2\sqrt{3}$ (c) 10 cm (d) none of these

5. The value of $\frac{2\tan 30^0}{1+\tan^2 30^0}$ is

(a) sin 60° (b) cos 60° (c) tan 60° (d) sin 30°

6. The value of $\frac{1-\tan^2 45^0}{1+\tan^2 45^0}$ is

(a) tan 90° (b) 1 (c) sin 45° (d) 0

7. sin 2A = 2 sin A is true when A =

(a) 0° (b) 30° (c) 45° (d) 60°

8. The value of $\frac{2\tan 30^0}{1-\tan^2 30^0}$ is

(a) sin 60° (b) cos 60° (c) tan 60° (d) sin 30°

9. $9\sec^2 A - 9\tan^2 A =$

(a) 1 (b) 9 (c) 8 (d) 0

10. $(1 + \tan A + \sec A)(1 + \cot A - \operatorname{cosec} A) =$

(a) 0 (b) 1 (c) 2 (d) –1

11. $(\sec A + \tan A)(1 - \sin A) =$

(a) sec A (b) sin A (c) cosec A (d) cos A

12. $\frac{1+\tan^2 A}{1+\cot^2 A} =$

(a) $\sec^2 A$ (b) –1 (c) $\cot^2 A$ (d) $\tan^2 A$

MCQ WORKSHEET-II
CLASS X: CHAPTER - 8
INTRODUCTION TO TRIGONOMETRY

1. If $\sin 3A = \cos (A - 26°)$, where 3A is an acute angle, find the value of A.
   (a) 29^0 (b) 30^0 (c) 26^0 (d) 36^0

2. If $\tan 2A = \cot (A - 18°)$, where 2A is an acute angle, find the value of A.
   (a) 29^0 (b) 30^0 (c) 26^0 (d) none of these

3. If $\sec 4A = \text{cosec}\ (A - 20°)$, where 4A is an acute angle, find the value of A.
   (a) 22^0 (b) 25^0 (c) 26^0 (d) none of these

4. The value of $\tan 48° \tan 23° \tan 42° \tan 67°$ is
   (a) 1 (b) 9 (c) 8 (d) 0

5. If ΔABC is right angled at C, then the value of $\cos(A + B)$ is
   (a) 0 (b) 1 (c) ½ (d) n.d.

6. The value of the expression $\left[\frac{\sin^2 22^0 + \sin^2 68^0}{\cos^2 22^0 + \cos^2 68^0} + \sin^2 63^0 + \cos 63^0 \sin 27^0\right]$ is
   (a) 3 (b) 0 (c) 1 (d) 2

7. If $\cos A = \frac{24}{25}$, then the value of sinA is
   (a) $\frac{7}{25}$ (b) $\frac{24}{25}$ (c) 1 (d) none of the these

8. If ΔABC is right angled at B, then the value of $\cos(A + C)$ is
   (a) 0 (b) 1 (c) ½ (d) n.d.

9. If $\tan A = \frac{4}{3}$, then the value of cosA is
   (a) $\frac{3}{5}$ (b) $\frac{4}{3}$ (c) 1 (d) none of the these

10. If ΔABC is right angled at C, in which AB = 29 units, BC = 21 units and $\angle ABC = \alpha$. Determine the values of $\cos^2\alpha + \sin^2\alpha$ is
    (a) 0 (b) 1 (c) ½ (d) n.d.

11. In a right triangle ABC, right-angled at B, if $\tan A = 1$, then the value of $2 \sin A \cos A =$
    (a) 0 (b) 1 (c) ½ (d) n.d.

12. Given $15 \cot A = 8$, then $\sin A =$
    (a) $\frac{3}{5}$ (b) $\frac{4}{3}$ (c) 1 (d) none of the these

MCQ WORKSHEET-III
CLASS X: CHAPTER - 8
INTRODUCTION TO TRIGONOMETRY

1. In a triangle PQR, right-angled at Q, PR + QR = 25 cm and PQ = 5 cm, then the value of sin P is
   (a) $\frac{7}{25}$ (b) $\frac{24}{25}$ (c) 1 (d) none of the these

2. In a triangle PQR, right-angled at Q, PQ = 3 cm and PR = 6 cm, then ∠QPR =
   (a) 0° (b) 30° (c) 45° (d) 60°

3. If $\sin(A - B) = \frac{1}{2}$ and $\cos(A + B) = \frac{1}{2}$, then the value of A and B, respectively are
   (a) 45° and 15° (b) 30° and 15° (c) 45° and 30° (d) none of these

4. If sin (A – B) = 1 and cos(A + B) = 1, then the value of A and B, respectively are
   (a) 45° and 15° (b) 30° and 15° (c) 45° and 30° (d) none of these

5. If $\tan(A - B) = \frac{1}{\sqrt{3}}$ and $\tan(A + B) = \sqrt{3}$, then the value of A and B, respectively are
   (a) 45° and 15° (b) 30° and 15° (c) 45° and 30° (d) none of these

6. If $\cos(A - B) = \frac{\sqrt{3}}{2}$ and sin (A + B) = 1, then the value of A and B, respectively are
   (a) 45° and 15° (b) 30° and 15° (c) 60° and 30° (d) none of these

7. The value of $2\cos^2 60^0 + 3\sin^2 45^0 - 3\sin^2 30^0 + 2\cos^2 90^0$ is
   (a) 1 (b) 5 (c) 5/4 (d) none of these

8. sin 2A = 2 sin AcosA is true when A =
   (a) 0° (b) 30° (c) 45° (d) any angle

9. sin A = cosA is true when A =
   (a) 0° (b) 30° (c) 45° (d) any angle

10. If $\sin A = \frac{1}{2}$, then the value of $3\cos A - 4\cos^3 A$ is
    (a) 0 (b) 1 (c) ½ (d) n.d.

11. If 3cotA = 4, then the value of $\cos^2 A - \sin^2 A$ is
    (a) $\frac{3}{4}$ (b) $\frac{7}{25}$ (c) ½ (d) $\frac{24}{25}$

12. If 3tanA = 4, then the value of $\frac{3\sin A + 2\cos A}{3\sin A - 2\cos A}$ is
    (a) 1 (b) $\frac{7}{25}$ (c) 3 (d) $\frac{24}{25}$

MCQ WORKSHEET-IV

CLASS X: CHAPTER - 8

INTRODUCTION TO TRIGONOMETRY

1. Value of θ, for $\sin 2\theta = 1$, *where* $0^0 < \theta < 90^0$ is:
   (a) 30° (b) 60° (c) 45° (d) 135^0.

2. Value of $\sec^2 26^0 - \cot^2 64^0$ is:
   (a) 1 (b) –1 (c) 0 (d) 2

3. Product $\tan 1^0 . \tan 2^0 . \tan 3^0 \ldots\ldots \tan 89^0$ is:
   (a) 1 (b) –1 (c) 0 (d) 90

4. $\sqrt{1+\tan^2\theta}$ is equal to:
   (a) $\cot\theta$ (b) $\cos\theta$ (c) $\operatorname{cosec}\theta$ (d) $\sec\theta$

5. If $A + B = 90^0$, $\cot B = \frac{3}{4}$ then tanA is equal to;
   (a) $\frac{3}{4}$ (b) $\frac{4}{3}$ (c) $\frac{1}{4}$ (d) $\frac{1}{3}$

6. Maximum value of $\frac{1}{\operatorname{cosec}\theta}$, $0^0 < \theta < 90^0$ is:
   (a) 1 (b) –1 (c) 2 (d) $\frac{1}{2}$

7. If $\cos\theta = \frac{1}{2}$, $\sin\phi = \frac{1}{2}$ then value of $\theta + \phi$ is
   (a) 30° (b) 60° (c) 90° (d) 120^0.

8. If Sin (A + B) = 1 = cos(A – B) then
   (a) $A = B = 90^0$ (b) $A = B = 0^0$ (c) $A = B = 45^0$ (d) A = 2B

9. The value of $\sin 60^0 \cos 30^0 - \cos 60^0 \sin 30^0$ is
   (a) 1 (b) –1 (c) 0 (d) none of these

10. The value of $2\sin^2 30^0 - 3\cos^2 45^0 + \tan^2 60^0 + 3\sin^2 90^0$ is
    (a) 1 (b) 5 (c) 0 (d) none of these

MCQ WORKSHEET-I
CLASS X: CHAPTER – 9
SOME APPLICATIONS TO TRIGONOMETRY

1. The angle of elevation of the top of a tower from a point on the ground, which is 20m away from the foot of the tower is 60^0. Find the height of the tower.
   (a) $10\sqrt{3}$ m (b) $30\sqrt{3}$ m (c) $20\sqrt{3}$ m (d) none of these

2. The height of a tower is 10m. What is the length of its shadow when Sun's altitude is 45^0?
   (a) 10 m (b) 30 m (c) 20 m (d) none of these

3. The angle of elevation of a ladder leaning against a wall is 60^0 and the foot of the ladder is 9.5 m away from the wall. Find the length of the ladder.
   (a) 10 m (b) 19 m (c) 20 m (d) none of these

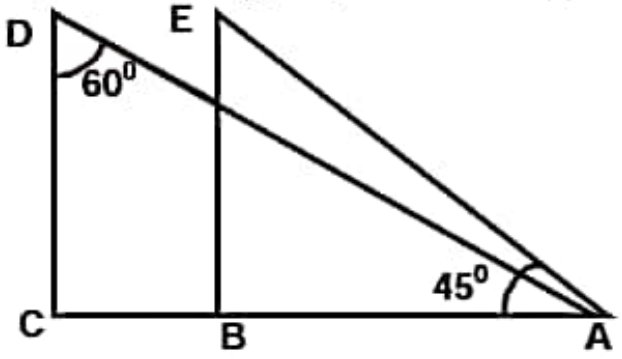
4. If the ratio of the height of a tower and the length of its shadow is $\sqrt{3}$: 1, what is the angle of elevation of the Sun?
   (a) 30^0 (b) 60^0 (c) 45^0 (d) none of these

5. What is the angle of elevation of the Sun when the length of the shadow of a vertical pole is equal to its height?
   (a) 30^0 (b) 60^0 (c) 45^0 (d) none of these

6. From a point on the ground, 20 m away from the foot of a vertical tower, the angle of elevation of the top of the tower is 60^0, what is the height of the tower?
   (a) $10\sqrt{3}$ m (b) $30\sqrt{3}$ m (c) $20\sqrt{3}$ m (d) none of these

7. If the angles of elevation of the top of a tower from two points at a distance of 4 m and 9 m from the base of the tower and in the same straight line with it are complementary, find the height of the tower.
   (a) 10 m (b) 6 m (c) 8 m (d) none of these

8. In the below fig. what are the angles of depression from the observing positions D and E of the object A?
   (a) 30^0, 45^0 (b) 60^0, 45^0 (c) 45^0, 60^0 (d) none of these



9. The ratio of the length of a rod and its shadow is 1: $\sqrt{3}$. The angle of elevation of the sun is
   (a) 30^0 (b) 60^0 (c) 45^0 (d) none of these

10. If the angle of elevation of a tower from a distance of 100m from its foot is 60^0, then the height of the tower is
    (a) $100\sqrt{3}$ m (b) $\frac{200}{\sqrt{3}}$ m (c) $50\sqrt{3}$ m (d) $\frac{100}{\sqrt{3}}$ m

MCQ WORKSHEET-II
CLASS X: CHAPTER – 9
SOME APPLICATIONS TO TRIGONOMETRY

1. If the altitude of the sun is at 60^0, then the height of the vertical tower that will cast a shadow of length 30m is

   (a) $30\sqrt{3}$ m (b) 15 m (c) $\frac{30}{\sqrt{3}}$ m (d) $15\sqrt{2}$ m

2. A tower subtends an angle of 30^0 at a point on the same level as its foot. At a second point 'h' metres above the first, the depression of the foot of the tower is 60^0. The height of the tower is

   (a) $\frac{h}{2}$ m (b) $\frac{h}{3}$ m (c) $\sqrt{3}h$ m (d) $\frac{h}{\sqrt{3}}$ m

3. A tower is $100\sqrt{3}$ m high. Find the angle of elevation if its top from a point 100 m away from its foot.

   (a) 30^0 (b) 60^0 (c) 45^0 (d) none of these

4. The angle of elevation of the top of a tower from a point on the ground, which is 30m away from the foot of the tower is 30^0. Find the height of the tower.

   (a) $10\sqrt{3}$ m (b) $30\sqrt{3}$ m (c) $20\sqrt{3}$ m (d) none of these

5. The string of a kite is 100m long and it makes an angle of 60^0 with the horizontal. Find the height of the kite, assuming that there is no slack in the string.

   (a) $100\sqrt{3}$ m (b) $\frac{200}{\sqrt{3}}$ m (c) $50\sqrt{3}$ m (d) $\frac{100}{\sqrt{3}}$ m

6. A kite is flying at a height of 60m above the ground. The inclination of the string with the ground is 60^0. Find the length of the string, assuming that there is no slack in the string.

   (a) $40\sqrt{3}$ m (b) $30\sqrt{3}$ m (c) $20\sqrt{3}$ m (d) none of these

7. A circus artist is climbing a 20m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground. Find the height of the pole if the angle made by the rope with the ground level is 30^0.

   (a) 10 m (b) 30 m (c) 20 m (d) none of these

8. A tower is 50m high, Its shadow is 'x' metres shorter when the sun's altitude is 45^0 than when it is 30^0. Find the value of 'x'

   (a) $100\sqrt{3}$ m (b) $\frac{200}{\sqrt{3}}$ m (c) $50\sqrt{3}$ m (d) none of these

9. Find the angular elevation of the sun when the shadow of a 10m long pole is $10\sqrt{3}$ m.

   (a) 30^0 (b) 60^0 (c) 45^0 (d) none of these

10. A vertical pole stands on the level ground. From a point on the ground 25m away from the foot of the pole, the angle of elevation of its top is found to be 60^0. Find the height of the pole.

    (a) $25\sqrt{3}$ m (b) $\frac{25}{\sqrt{3}}$ m (c) $50\sqrt{3}$ m (d) none of these

MCQ WORKSHEET-III
CLASS X: CHAPTER – 9
SOME APPLICATIONS TO TRIGONOMETRY

1. A kite is flying at a height of 75m above the ground. The inclination of the string with the ground is 60^0. Find the length of the string, assuming that there is no slack in the string.
   (a) $40\sqrt{3}$ m (b) $30\sqrt{3}$ m (c) $50\sqrt{3}$ m (d) none of these
2. The angle of elevation of the tope of a tree from a point A on the ground is 60^0. On walking 20m away from its base, to a point B, the angle of elevation changes to 30^0. Find the height of the tree.
   (a) $10\sqrt{3}$ m (b) $30\sqrt{3}$ m (c) $20\sqrt{3}$ m (d) none of these
3. A 1.5m tall boy stands at a distance of 2m from lamp post and casts a shadow of 4.5m on the ground. Find the height of the lamp post.
   (a) 3 m (b) 2.5 m (c) 5 m (d) none of these
4. The height of the tower is 100m. When the angle of elevation of the sun changes from 30^0 to 45^0, the shadow of the tower becomes 'x' meters less. The value of 'x' is
   (a) $100\sqrt{3}$ m (b) 100 m (c) $100(\sqrt{3}-1)$ m (d) $\frac{100}{\sqrt{3}}$
5. The tops of two poles of height 20m and 14m are connected by a wire. If the wire makes an angle of 30^0 with horizontal, then the length of the wire is
   (a) 12 m (b) 10 m (c) 8 m (d) 6 m
6. If the angles of elevation of a tower from two points distant a and b (a > b) from its foot and in the same straight line from it are 30^0 and 60^0, then the height of the tower is
   (a) $\sqrt{a+b}$ m (b) $\sqrt{a-b}$ m (c) $\sqrt{ab}$ m (d) $\sqrt{\frac{a}{b}}$ m
7. The angles of elevation of the top of a tower from two points at a distance of 'a' m and 'b' m from the base of the tower and in the same straight line with it are complementary, then the height of the tower is
   (a) $\sqrt{a+b}$ m (b) $\sqrt{a-b}$ m (c) $\sqrt{ab}$ m (d) $\sqrt{\frac{a}{b}}$ m
8. From the top of a cliff 25m high the angle of elevation of a tower is found to be equal to the angle of depression of the foot of the tower. The height of the tower is
   (a) 25 m (b) 50 m (c) 75 m (d) 100 m
9. If the angle of elevation of a cloud from a point 200m above a lake is 30^0 and the angle of depression of its reflection in the lake is 60^0, then the height of the cloud above the lake is
   (a) 200 m (b) 500 m (c) 30 m (d) 400 m
10. The angle of elevation of a cloud from a point 'h' meter above a lake is 'α'. The angle of depression of its reflection in the lake is 45^0. The height of the cloud is
    (a) h.tanα (b) $\frac{h(1+\tan\alpha)}{(1-\tan\alpha)}$ (c) $\frac{h(1-\tan\alpha)}{(1+\tan\alpha)}$ (d) none of these

MCQ WORKSHEET-I

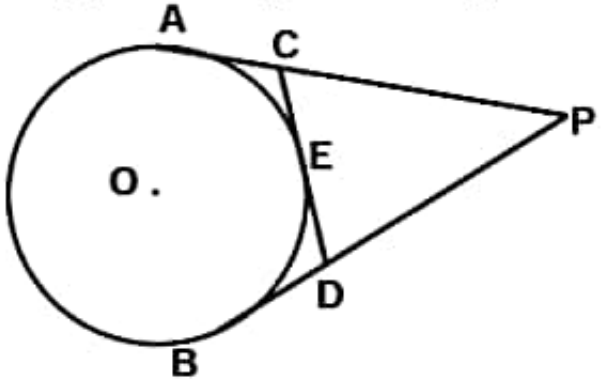
CLASS X: CHAPTER – 10

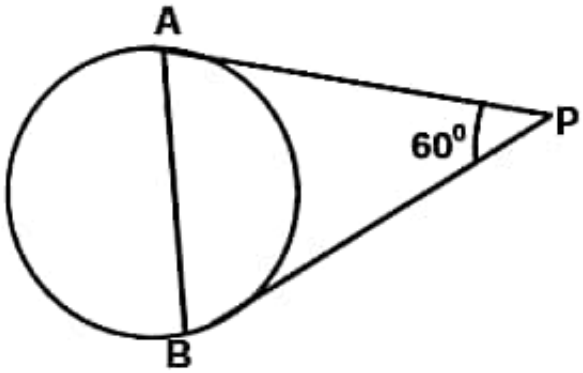
CIRCLES

1. Find the length of tangent drawn to a circle with radius 7 cm from a point 25 cm away from the centre.
   (a) 24 cm (b) 27 cm (c) 26 cm (d) 25 cm

2. A point P is 26 cm away from the centre of a circle and the length of the tangent drawn from P to the circle is 24 cm. Find the radius of the circle.
   (a) 11 cm (b) 10 cm (c) 16 cm (d) 15 cm

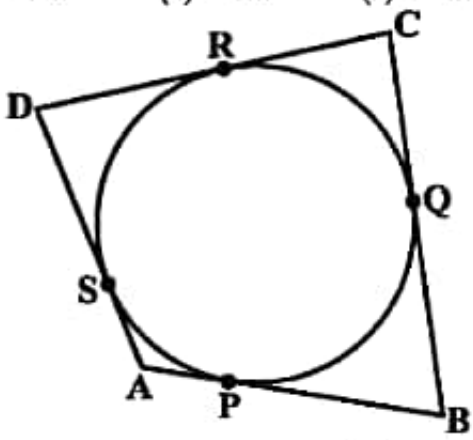
3. From an external point P, tangents PA and PB are drawn to a circle with centre O. If CD is the tangent to the circle at a point E and PA = 14 cm, find the perimeter of the ΔPCD.
   (a) 28 cm (b) 27 cm (c) 26 cm (d) 25 cm

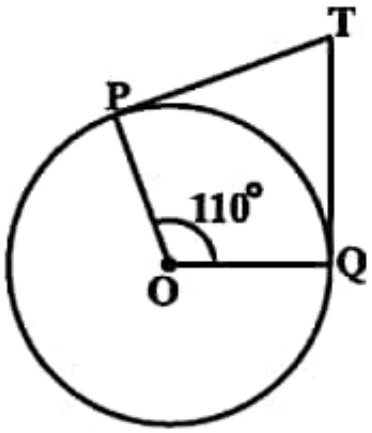




4. In the above sided figure, PA and PB are tangents such that PA = 9cm and ∠APB = 60^0. Find the length of the chord AB.
   (a) 4 cm (b) 7 cm (c) 6 cm (d) 9 cm

5. In the below figure the circle touches all the sides of a quadrilateral ABCD whose three sides are AB = 6 cm, BC = 7 cm, CD = 4 cm. Find AD.
   (a) 4 cm (b) 3 cm (c) 6 cm (d) 9 cm





6. In the above sided Fig., if TP and TQ are the two tangents to a circle with centre O so that ∠POQ = 110°, then ∠PTQ is equal to
   (a) 60^0 (b) 70^0 (c) 80^0 (d) 90^0

7. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80°, then ∠POA is equal to
   (a) 60^0 (b) 70^0 (c) 80^0 (d) 50^0

8. The length of a tangent from a point A at distance 5 cm from the centre of the circle is 4 cm. Find the radius of the circle.
   (a) 4 cm (b) 3 cm (c) 6 cm (d) 5 cm

9. From a point P, 10 cm away from the centre of a circle, a tangent PT of length 8 cm is drawn. Find the radius of the circle.
   (a) 4 cm (b) 7 cm (c) 6 cm (d) 5 cm

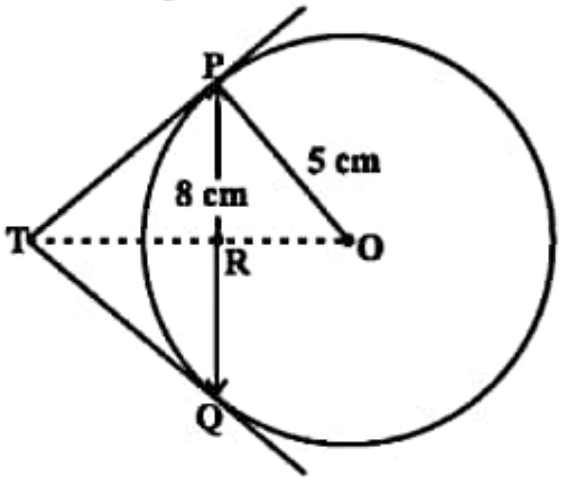
10. PT is tangent to a circle with centre O, OT = 56 cm, TP = 90 cm, find OP
   (a) 104 cm (b) 107 cm (c) 106 cm (d) 105 cm

11. TP and TQ are the two tangents to a circle with center O so that angle $\angle POQ = 130^0$. Find $\angle PTQ$.
   (a) 50^0 (b) 70^0 (c) 80^0 (d) none of these

12. From a point Q, the length of the tangent to a circle is 40 cm and the distance of Q from the centre is 41 cm. Find the radius of the circle.
   (a) 4 cm (b) 3 cm (c) 6 cm (d) 9 cm

13. The common point of a tangent to a circle with the circle is called _____
   (a) centre (b) point of contact (c) end point (d) none of these.

14. PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T (see below figure). Find the length TP.
   (a) $\frac{20}{3}$ cm (b) $\frac{10}{3}$ cm (c) $\frac{40}{3}$ cm (d) none of these



15. *The lengths of tangents drawn from an external point to a circle are equal.*
   (a) half (b) one third (c) one fourth (d) equal

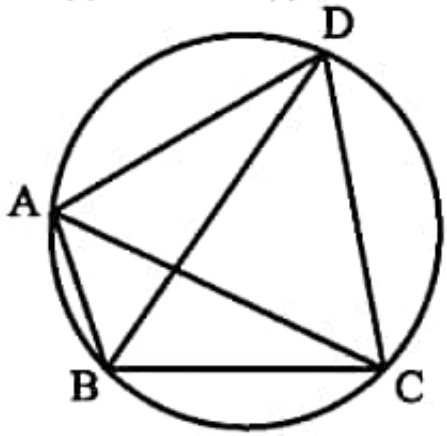
MCQ WORKSHEET-II

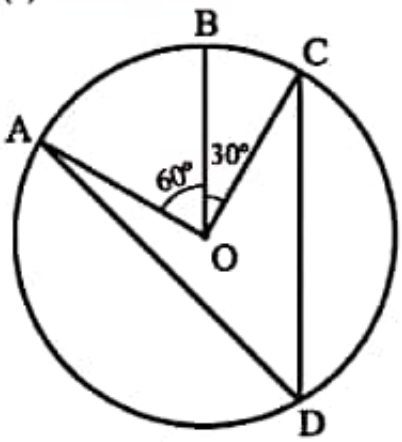
CLASS X: CHAPTER – 10

CIRCLES

1. In below Fig. ABCD is a cyclic quadrilateral in which AC and BD are its diagonals. If ∠ DBC = 55° and ∠BAC = 45°, find ∠BCD.

   (a) 80° (b) 60° (c) 90° (d) none of these





2. In above sided Fig. A,B and C are three points on a circle with centre O such that ∠BOC = 30° and ∠AOB = 60°. If D is a point on the circle other than the arc ABC, find ∠ADC.

   (a) 45° (b) 60° (c) 90° (d) none of these

3. A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the minor arc

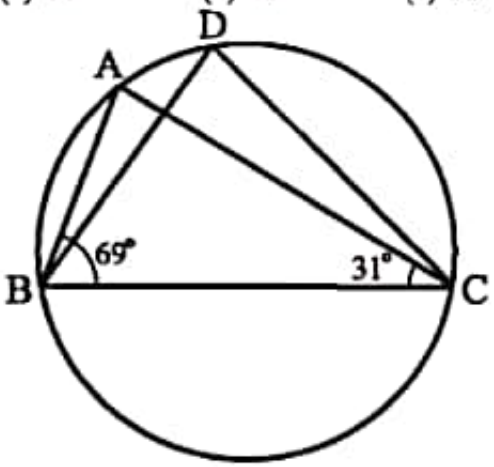
   (a) 150° (b) 30° (c) 60° (d) none of these

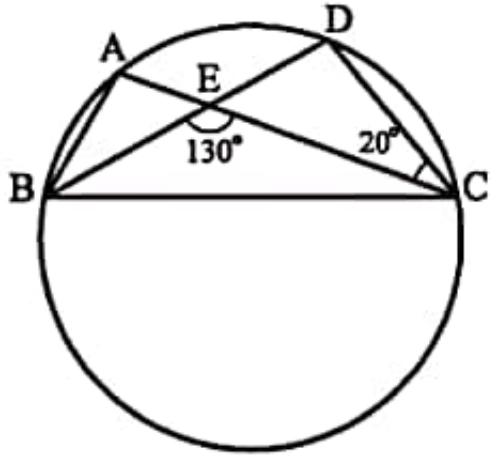
4. A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the major arc.

   (a) 150° (b) 30° (c) 60° (d) none of these

5. In the below Fig., ∠ABC = 69°, ∠ACB = 31°, find ∠BDC.

   (a) 80° (b) 60° (c) 90° (d) 100°





6. In the above sided Fig., A, B, C and D are four points on a circle. AC and BD intersect at a point E such that ∠BEC = 130° and ∠ECD = 20°. Find ∠BAC.

   (a) 110° (b) 150° (c) 90° (d) 100°

7. ABCD is a cyclic quadrilateral whose diagonals intersect at a point E. If ∠DBC = 70°, ∠BAC is 30°, find ∠BCD.

   (a) 80° (b) 60° (c) 90° (d) 100°

8. ABCD is a cyclic quadrilateral. If $\angle BCD = 100°$, $\angle ABD$ is 30°, find $\angle ABD$.

(a) 80° (b) 60° (c) 90° (d) 70^0

9. ABCD is a cyclic quadrilateral. If $\angle DBC = 80°$, $\angle BAC$ is 40°, find $\angle BCD$.

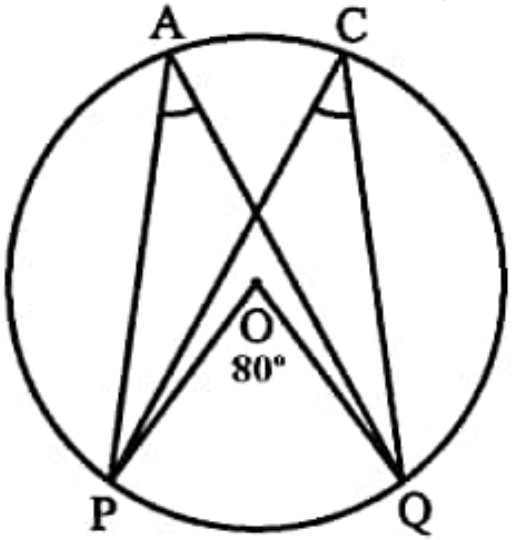
(a) 80° (b) 60° (c) 90° (d) 70^0

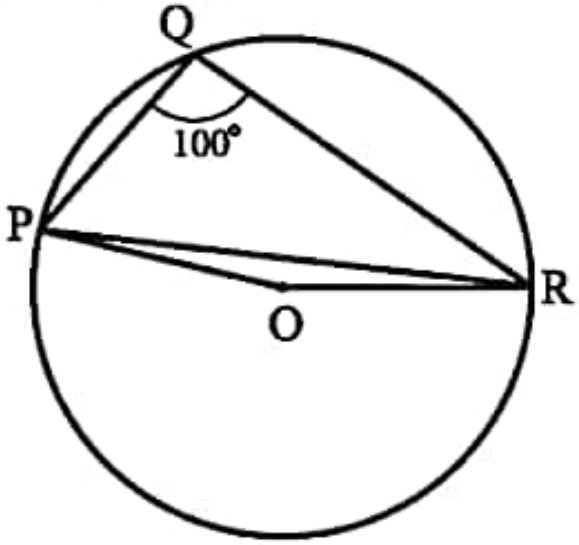
10. ABCD is a cyclic quadrilateral in which BC is parallel to AD, $\angle ADC = 110^0$ and $\angle BAC = 50^0$. Find $\angle DAC$

(a) 80° (b) 60° (c) 90° (d) 170^0

11. In the below figure, $\angle POQ = 80^0$, find $\angle PAQ$

(a) 80° (b) 40° (c) 100° (d) none of these





12. In the above figure, $\angle PQR = 100°$, where P, Q and R are points on a circle with centre O. Find $\angle OPR$.

(a) 80° (b) 40° (c) 10° (d) none of these

MCQ WORKSHEET-III
CLASS X: CHAPTER – 10
CIRCLES

1. Distance of chord AB from the centre is 12 cm and length of the chord is 10 cm. Then diameter of the circle is

   A. 26 cm B. 13 cm C. $\sqrt{244}$ cm D. 20 cm

2. Two circles are drawn with side AB and AC of a triangle ABC as diameters. Circles intersect at a point D, Then

   A. $\angle ADB$ and $\angle ADC$ are equal B. $\angle ADB$ and $\angle ADC$ are compementary

   C. Points B, D, C are collinear D. none of these

3. The region between a chord and either of the arcs is called

   A. an arc B. a sector C. a segment D. a semicircle

4. A circle divides the plane in which it lies, including circle in

   A. 2 parts B. 3 parts C. 4 parts D. 5 parts

5. If diagonals of a cyclic quadrilateral are the diameters of a circle through the vertices of a quadrilateral, then quadrilateral is a

   A. parallelogram B. square C. rectangle D. trapezium

6. Given three non collinear points, then the number of circles which can be drawn through these three points are

   A. one B. zero C. two D. infinite

7. In a circle with centre O, AB and CD are two diameters perpendicular to each other. The length of chord AC is

   A. 2 AB B. $\sqrt{2}$ AB C. $\frac{1}{2}$AB D. $\frac{1}{\sqrt{2}}$AB

8. If AB is a chord of a circle, P and Q are the two points on the circle different from A and B, then

   A. $\angle APB = \angle AQB$

   B. $\angle APB + \angle AQB = 180°$

   C. $\angle APB + \angle AQB = 90°$

   D. $\angle APB + \angle AQB = 180°$