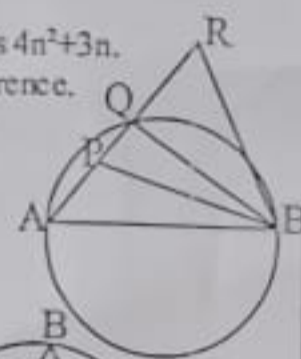


1. Consider the arithmetic sequence 7, 12, 17, ...
- Find the common difference.
 - Find the 10th term.
 - What is the difference of its 5th term and 25th term.
 - Is 100 a term of this sequence?
 - Which term is obtained, when 60 is added to 10th term?
 - Is the difference of any two terms is 62?
 - Find the algebraic form of this sequence.
 - Find the sum of first 20 terms.

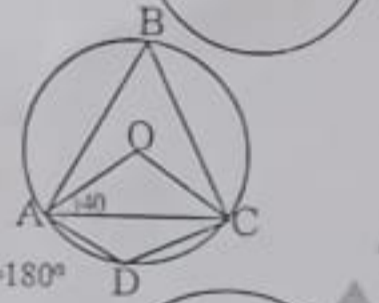
2. 7th term of an arithmetic sequence is 23 and its 10th term is 32.
- Find its 13th term. (b) Find its common difference.
 - Find its first term. (d) Write the sequence.
 - What is the difference between the sum of first 10 terms and next 10 terms of this sequence?

3. Algebraic form of sum of the sequence is $4n^2 + 3n$.
- Find the first term and common difference.
 - Find the sum of first 10 terms.

4. In the figure, AB is a diameter, $\angle P, \angle Q, \angle R$ are in the ratio 1:2:3
- Find $\angle Q$.
 - Find $\angle P$ and $\angle R$.



5. In the figure, O is the centre, $\angle OAC = 40^\circ$. Find the following
- $\angle ACO, \angle AOC, \angle B$ and $\angle D$
 - If $\angle OAC = x$ and $\angle B = y$ then prove that $x + y = 90^\circ$
 - If $\angle OAB = a, \angle OCB = b$ and $\angle ADC = c$ then prove that $a + b + c = 180^\circ$



6. A circle is divided into three sectors as shown in the figure. The central angle of first sector is 60° . A point is marked in the circle without looking.
- What is the probability of the point to be in the first sector?
 - If the probability of point is in the second sector is $5/12$. What is the central angle of this sector?
 - What is the probability of the point is on the third sector.



7. Two dice numbered 1 to 6 in each face are rolled together. The numbers appeared on the top face of dices are written in pairs.
- How many such pairs?
 - What is the probability of both numbers are same.
 - What is the probability of one number is greater than other.
 - What is the probability of sum of numbers on dices to be 7.
8. (a) What is the algebraic form the arithmetic sequence 5, 6, 7, ...
(b) Square of a term of this sequence is 2500. Find the term and its position.

9. Consider the arithmetic sequence 3, 7, 11, ...
- Find the algebraic form of the sum of the sequence.
 - How many terms of this sequence must be added to get the sum 210?

10. In the figure, O is the centre $\angle C = 60^\circ$ and $AB = 9$ cm.
- Find $\angle AOB$ and $\angle ABC$
 - Find the radius (c) If AD is a diameter then find $\angle ABD$ (d) Find the length of BD

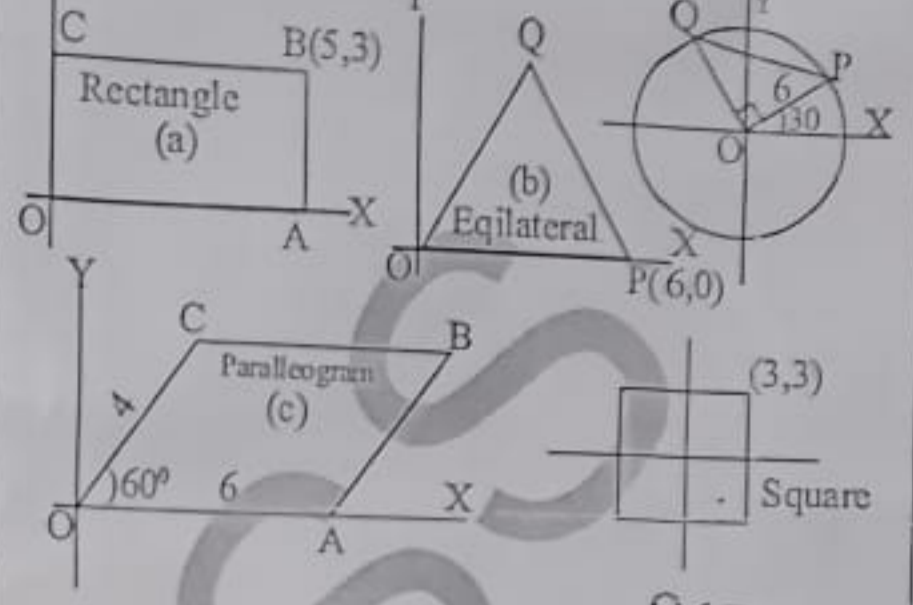


11. In $\triangle ABC$, $AB = 20$ cm, $BC = 28$ cm, $\angle B = 37^\circ$
- Find the length of the perpendicular AD drawn from A to BC.
 - Find the area of $\triangle ABC$
 - Find the length of BD (c) Find the length of AC
 - If $\angle B = 143^\circ$, then What is AC? [$\sin 37^\circ = 0.6$]

12. Draw X, Y axes, mark the following points, joint the consecutive points to form a polygon, Write its suitable name, find the lengths of sides and diagonals and write the equation of diagonals:
- (2, 2), (-2, 2), (-2, -2), (2, -2)
 - (4, 3), (-4, 3), (-4, -3), (4, -3)

13. Opposite vertices of rectangle with sides parallel to axes are given. Find the coordinates of other two vertices, find the length of the diagonals and area of the rectangles
- A(1, 2), C(9, 8) (b) P(2, 3), R(8, 7) (c) M(-1, -2), O(-5, -4)

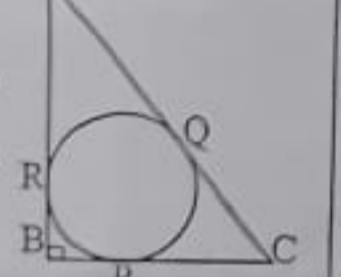
14. Find the coordinates of vertices of the following.



15. In the figure O is the centre of the circle and $\angle PQR = 50^\circ$
- Find $\angle S$ and $\angle QOR$
 - Find the $\angle P$



16. In the figure, $AB = 12$ cm and $BC = 5$ cm
- Find the length of AC.
 - Find the lengths of AR, BP and CQ
 - Find the inradius
 - Find the area of $\triangle ABC$.



17. Curved surface area of solid hemisphere is 30 cm^2 . Find area of the flat face and find its total surface area

17. A wooden solid cone has 24 cm height and 9 cm radius.
- What is the volume of the cone?
 - What is the lateral height?

18. A line is drawn by joining the points A(2, 1) and B(14, 25)
- Find the coordinates of midpoint of AB.
 - Find the coordinates of the point P on AB such that $AP:PB = 1:3$
 - If C(3, 3) then prove A, B, C are on the same line

19. ABCD is a parallelogram with A(5, 2), B(15, 2) and C(15, 8)
- Find the coordinates of the vertex D.
 - If P, Q, R and S are the midpoints of the sides AB, BC, CD and AD then find the coordinates of P, Q, R, and S.
 - Prove that PQRS is a parallelogram.

20. A line is drawn by joining the points (2, 5) and (4, 1).
- Find the coordinates of other two points on this line.
 - Find the slope of this line.
 - If (x, y) is a point on this line, then prove that (x+2, y+6) is also point on this line.
 - Prove that y coordinate of any point on this line is one less than the 3 times of the x coordinate.

21. A circle with origin as centre passing through the point (12, 7). Find the radius and equation of this circle

22. If $f(x) = x^3 - x^2 + Kx + K$. (x-3) is a factor of this polynomial.
- Find P(0)
 - Find the number K
 - Check whether (x-1) is another factor