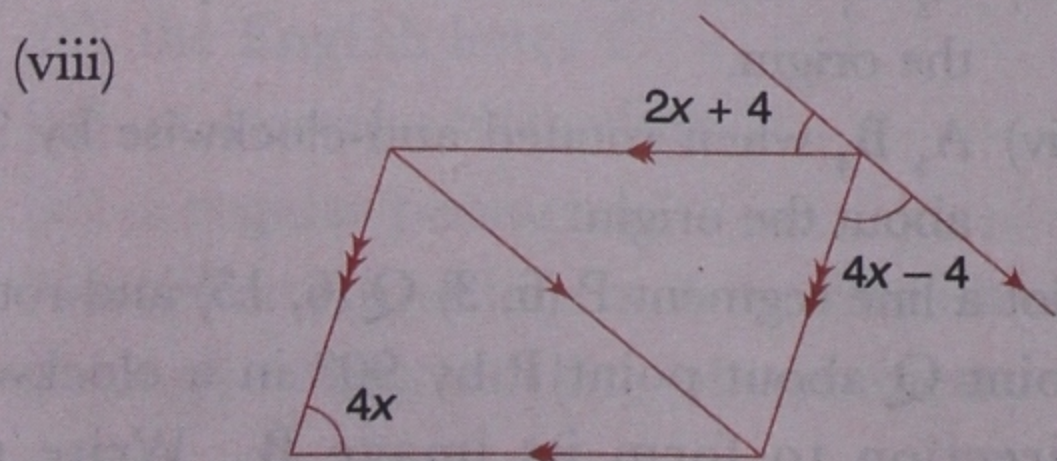
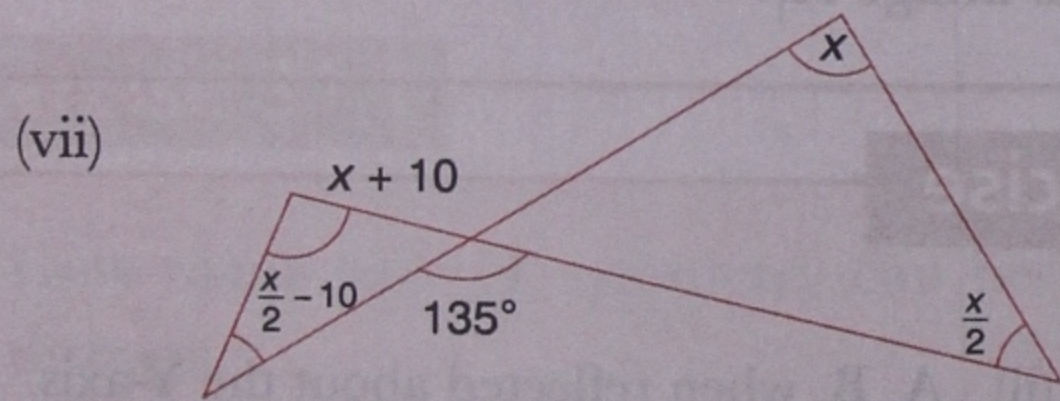
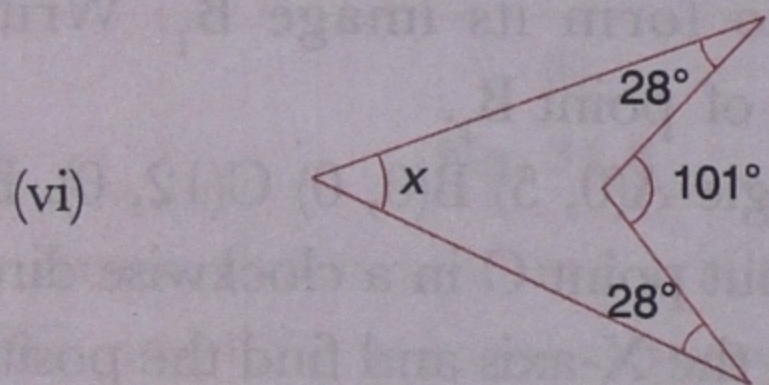
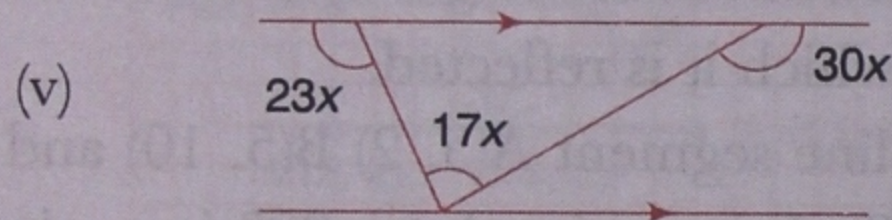
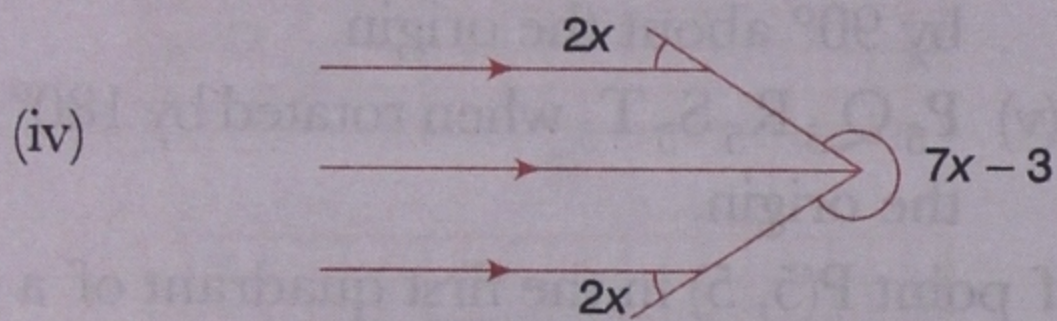
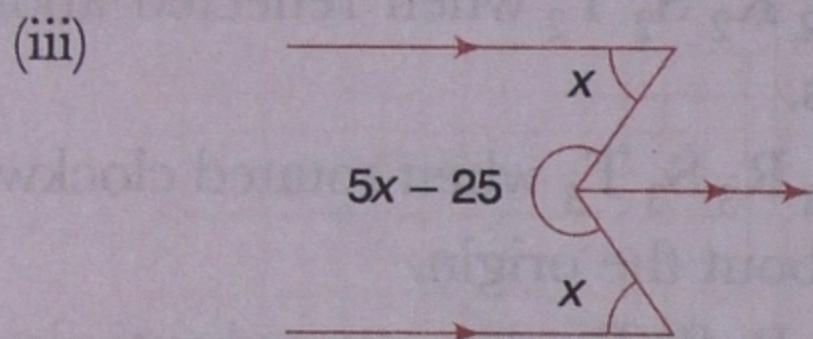
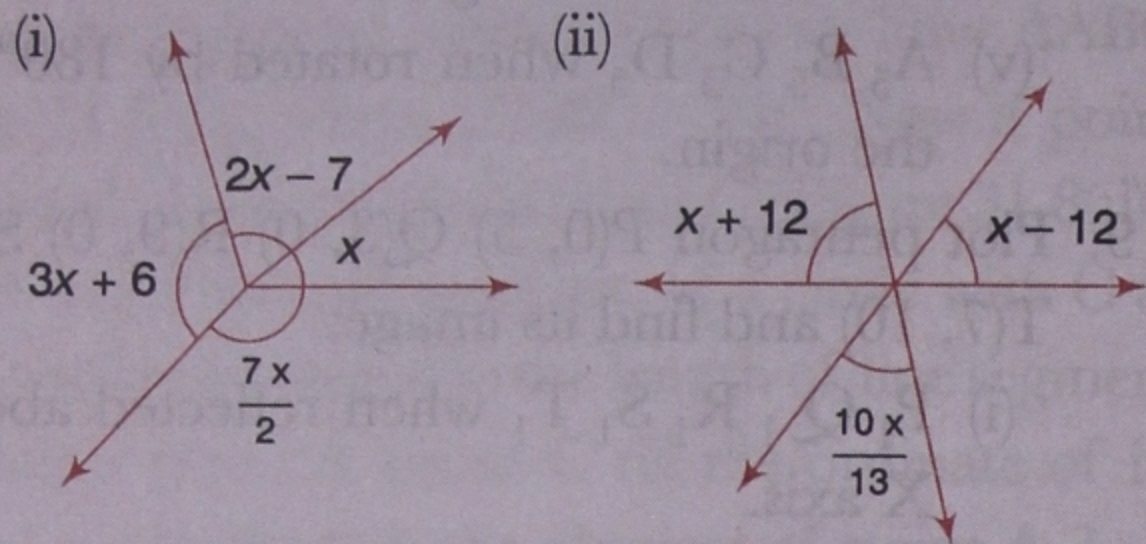


UNIT TEST PAPER

Geometry

1. Find the measure of x in the following figures.



- Construct $AB \parallel PQ$ such that the distance between AB and PQ is 12 cm.
- Draw $AB = 11$ cm. Take a point C outside AB . Construct $CD \parallel AB$.
- The vertical angle in an isosceles triangle is $3x - 5$ while a base angle is x . Find the measure of all the angles of the triangle.
- An exterior angle of a triangle measures $8x$ while one of its opposite interior angle measures $\frac{5x}{2}$. If the other opposite interior angle measures 66° , find the value of x .

- Identify the angles with the greatest and the least magnitudes in ΔPQR , given $PQ = 3.56$ cm, $QR = 5.63$ cm, and $RP = 3.65$ cm.

- Identify the longest and the shortest sides in ΔABC shown in Figure (i).

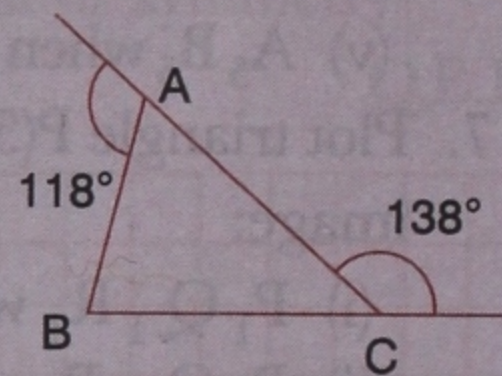


Fig. (i)

- Construct ΔABC , given $AB = 6.5$ cm, $CA = 7.5$ cm, and altitude $AO = 6$ cm.
- Construct ΔABC where $AB = AC$, given $AB = 7.5$ cm and $\angle CAB = 60^\circ$.

- (i) Construct equilateral ΔPQR , given its altitude $PO = 6$ cm.
(ii) Two triangles of a particular type are congruent to each other if their perimeters are equal. What type of triangles are they?

- If the base of an isosceles triangle measures 12 cm and its altitude from the vertex to the base measures 8 cm, find the measure of its equal sides.

- Find the measure of DE and $\angle BCA$ in Figure (ii).

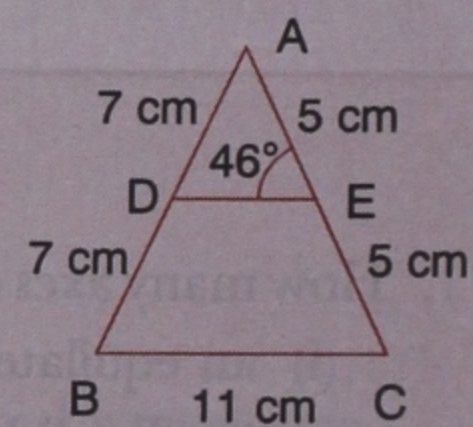


Fig. (ii)

- The vertical ladder of a 'slide' in a park is 7 feet high while the slide is 25 feet long. If a boy slides down from the top of the slide, how far from its base will he land?

[Hint: see the sketch given in Figure (iii)]

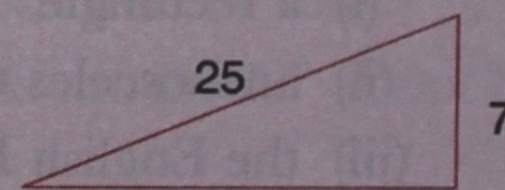


Fig. (iii)

14. An angle in a quadrilateral measures 135° . If the other three angles are in the ratio $3 : 5 : 7$, find all the angles of the quadrilateral.
15. An angle in a quadrilateral measures 96° . If the other three angles are given as $2x + 3$, $3x + 4$, and $4x + 5$, find all the angles of the quadrilateral.
16. An exterior angle of a parallelogram measures 107° . Find all the angles of the parallelogram.
17. The perimeter of a parallelogram with its sides in the ratio $3 : 8$ is given to be 55 cm. Find the measure of two adjacent sides of the parallelogram.
18. Construct quadrilateral ABCD, given $AB = 7$ cm, $BC = 5$ cm, $CD = 8$ cm, $\angle ABC = 75^\circ$, and $\angle BCD = 90^\circ$.
19. Construct parallelogram EFGH, given $EF = 9$ cm, $GH = 6$ cm, and altitude $GO = 4$ cm.
20. Construct rectangle IJKL, given diagonal $JL = 9$ cm and $\angle JOK = 60^\circ$ where diagonals IK and JL intersect at point O.
21. Construct rhombus MNOP, given diagonal $MO = 8.5$ cm and $\angle MNO = 60^\circ$.
22. Construct square QRST, given diagonal $RT = 9$ cm.
23. Given $AB = 9$ cm and $AD = 6$ cm in rectangle ABCD shown in Figure (iv), find the area of $\triangle ADE$.

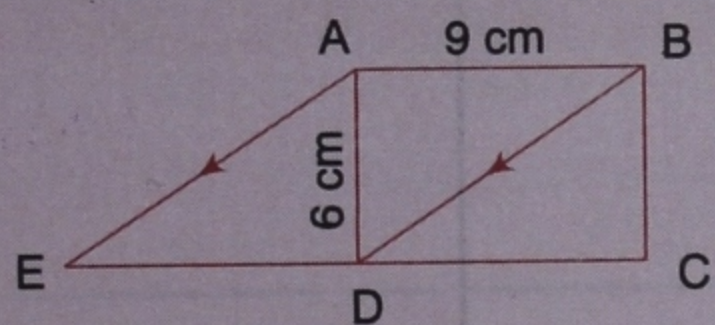


Fig. (iv)

24. Find the sum of the interior angles of a polygon with 11 sides.
25. How many diagonals can be drawn from the vertex in a polygon with 11 sides?
26. Drawing diagonals from one vertex, how many triangles can be formed in a polygon with 11 sides?
27. Find the measure of each interior angle of a regular polygon with 12 sides.
28. How many sides are there in a regular polygon if each exterior angle measures 18° ?
29. Is a regular polygon possible in which each exterior angle measures 11.25° ?
30. (i) Construct the incircle of $\triangle ABC$ given $AB = AC$, base $BC = 6$ cm, and altitude $= 4$ cm.
(ii) Construct the circumcircle of equilateral $\triangle PQR$ given its height is 9 cm. Will the diameter of the circle be more than or less than 9 cm?
31. What is the order of rotational symmetry of a ceiling fan with 3 blades, when seen from directly under the fan?
32. Plot $\triangle ABC$, given $A(2, 2)$ $B(9, 3)$ $C(5, 8)$ and find its image $A_1B_1C_1$ when reflected about the Y axis.
33. Plot a pentagon $A(0, 5)$ $B(5, 0)$ $C(11, 6)$ $D(9, 10)$ $E(3, 8)$ and find its image $A_1B_1C_1D_1E_1$ when rotated anti-clockwise about the origin by 90° .
34. When point A is rotated about the zero mark to point A_1 on the number line, A_1 represents the position of an irrational number on the number line. Apply the Pythagoras' theorem to find the irrational numbers represented by A_1 in each of the following:

