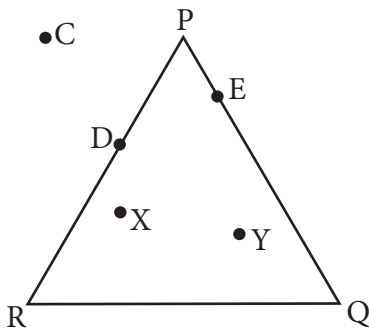**Q1. Find the following and fill in the blank against each of the following:**
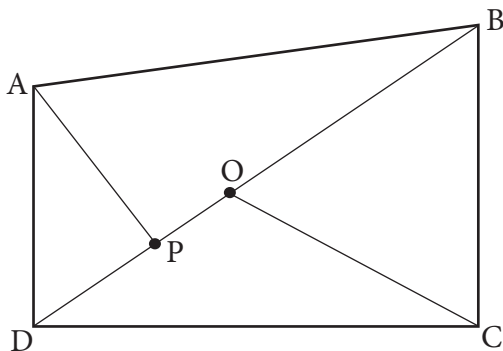
    a. Side opposite to the vertex A of ΔABC   : _____

    b. Angle opposite to the side XZ of ΔXYZ   : _____

    c. Vertex opposite to the side PQ of ΔPQR   : _____

Q2. In the given figure identify the points that lie:

    a. In the interior of ΔPQR: _____

    b. In the exterior of ΔPQR: _____

    c. On the ΔPQR: _____

Q3. Mark the following points in the figure given below:

    a. A point X that lies on ΔADP as well as ΔODC.

    b. A point Z that lies in the exterior of all the triangles.

    c. A point Y that lies **only** on the ΔAPB.

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Q4. Classify the following triangles on the basis of angles:

    a. 22°, 36°, 122°   : _____

    b. 90°, 75°, 15°   : _____

    c. 85°, 15°, 80°   : _____

    d. 75°, 35°, 70°   : _____

Q5. Tick the correct option:
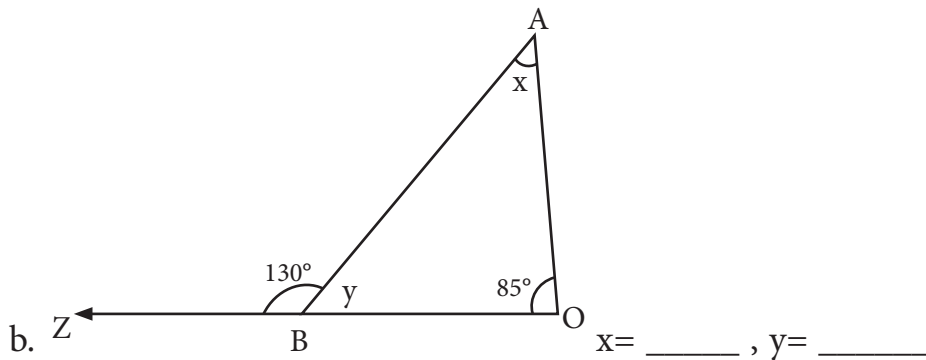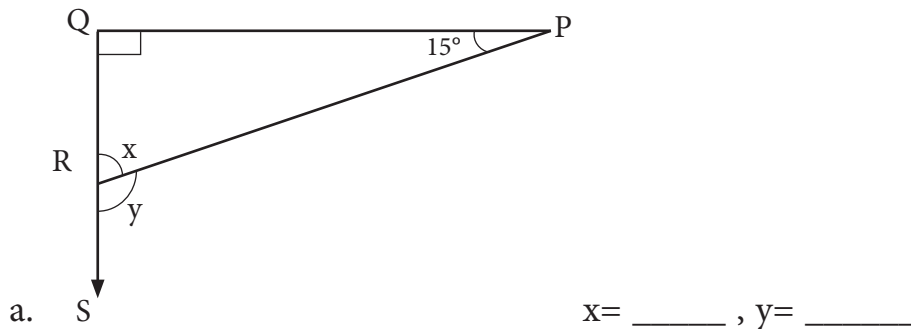
Can a triangle have:

    a. Two right angles?   (Yes/No)

    b. Two obtuse angles?   (Yes/No)

    c. Two acute angles?   (Yes/No)

Q6. The three angles of a triangle are in the ratio 3:4:5. Find the measure of each angle. Also classify the triangle on the basis of its angles.

Answer: Measure of the angles : _____

          Type of triangle   : _____

Q7. Find the value of x and y in the following:

a.

x= _____ , y= _____

b.

x= _____ , y= _____

Q8. If there is a point O in the interior of ΔABC, prove that:

$$OA + OB + OC > \frac{1}{2}(AB + BC + CA)$$

Q9. **The measurements of the three sides of each triangle are to be listed in the given table. On the basis of the type of triangle fill in the missing entries in the table.**

Type of triangle	Length of first side	Length of second side	Length of third side
Equilateral	5 cm	_____	_____
Isosceles	8 cm	3 cm	_____
Scalene	7 cm	6 cm	_____

Q10. In a ΔABC , O is a point on BC such that AO is the median. Prove that:
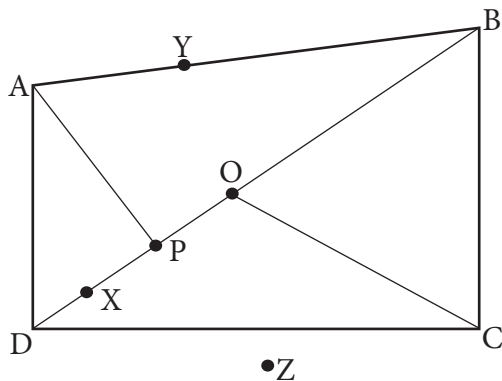
AB + AC > 2 OB

ANSWERS

1.   a. BC,   b. $\angle$XYZ,   c. R

2.   a. X, Y;   b. C,   c. D, E

3.

4.   a. obtuse-angled triangle,   b. right-angled triangle,   c. acute-angled triangle,   d. acute-angled triangle

5.   a. No,   b. No,   c. Yes

6.   45°, 60°, 75°; Acute-angled triangle

7.   a. $x = 75°$, $y = 105°$;

     b. $x = 45°$, 50°

8.   Proof:

     OA + OB > AB

     OA + OC > AC

     OB + OC > BC

     Adding all 3 inequations:

     2(OA + OB + OC) > AB + BC + CA

     $OA + OB + OC > \dfrac{1}{2} (AB + BC + CA)$

9.

Type of triangle	Length of first side	Length of second side	Length of third side
Equilateral	5 cm	5 cm	5 cm
Isosceles	8 cm	3 cm	8 cm
Scalene	7 cm	6 cm	2 cm or above

10.   Proof:

     AB + AC > BC

     AB + AC > 2 OB (O is the mid-point of BC)

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