



ASSIGNMENT NO. 7

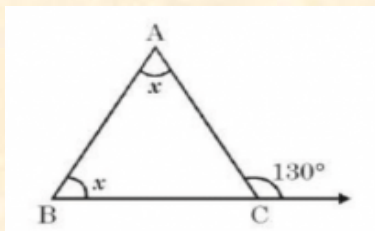
SUBJECT: MATHS

CLASS-VII

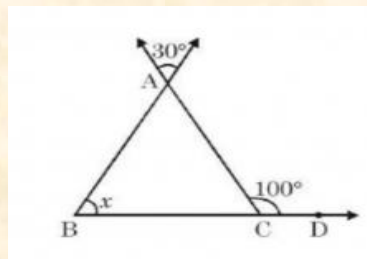
NOVEMBER, 2025

THE TRIANGLE AND ITS PROPERTIES

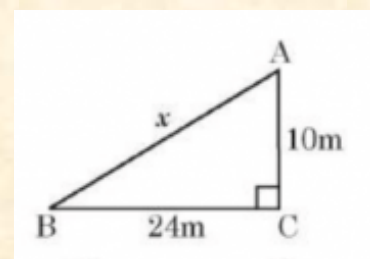
Q1. Find the value of x in the given figures:



(a)

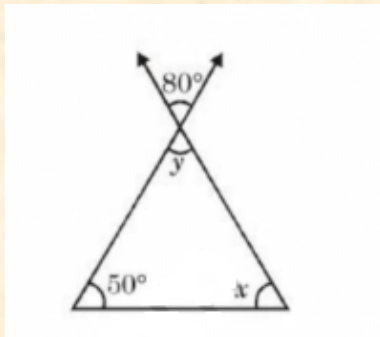


(b)



(c)

Q2. Find the value of x and y in the given figure:



Q3. Which is the longest side in the triangle ABC right angled at B?

- (a) AB (b) BC (c) AC

Q4. In a $\triangle ABC$, which of the given condition holds?

- (a) $AB - BC > CA$
(b) $AB + BC < BC$
(c) $AB - BC < BC$
(d) $AB + CA < BC$

Q5. Is it possible to have a triangle with the following sides?

(a) 4cm, 5 cm, 6cm

(b) 2.5 cm, 3cm, 3.5cm

Q6. One of the angles of a triangle is 70° and the other two angles are equal. Find the measure of two angles.

Q7. The angles of a triangle are in the ratio 1:2:3. Determine measure of all the angles.

Q8. Two sides of a triangle are 10cm and 15cm. What will be the maximum length of third side?

Q9. Find the perimeter of a rectangle with length 24 cm and diagonal 25cm.

Q10. Determine whether the triangle whose lengths of sides are 3cm, 4cm, 5cm is a right-angled triangle.

ASSERTION-REASONING BASED QUESTIONS

1. Assertion: The medians of a triangle are always equal in length.

Reason: Medians connect the midpoint of a side to the opposite vertex.

2. Assertion: An exterior angle of a triangle is equal to the sum of the two interior adjacent angles.

Reason: The sum of the angles in a triangle is always 180° .

3. Assertion: An exterior angle of a triangle is equal to 100° , and the two interior opposite angles are equal. Then, each of these angles is equal to 50° .

Reason: An exterior angle of a triangle is equal to the sum of the two interior opposite angles.

4. Assertion: In an equilateral triangle, the medians are equal in length.

Reason: In an equilateral triangle, all sides and angles are equal, and therefore, the medians are also equal.

(a) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.

(b) Both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.

(c) Assertion is correct but Reason is incorrect.

(d) Assertion is incorrect but Reason is correct.

CASE – STUDY BASED QUESTIONS

Q1. During a school project on map reading and navigation, a group of students is tasked with determining the distance between two points on a map using the properties of triangles. The map includes a scale indicating that 1 cm on the map corresponds to 1 km in real life. The students identify two points on the map, A and B, which are 8 cm apart. They also identify a third point, C, such that point A is 5 cm from C and point B is 4 cm from C, forming a triangle:

- (i) What type of triangle is formed by points A, B, and C?
- (ii) Calculate the real-life distance between points A and B.
- (iii) If the students find another point, D, on the map such that it forms a right triangle with points A and C, and the distance between A and D is 4 cm, what is the distance between C and D?
- (iv) Is the triangle formed by points A, B, and C a right triangle.

Q2. A group of students are working on a project to design a triangular park. The park is to be designed in the shape of a triangle. The students have decided on the angles of the triangle, but they need to verify if their design is correct:

- (i) The students have decided that one angle of the park should be 60 degrees, and the second angle should be 70 degrees. What should be the measure of the third angle for the park to have a triangular shape?
- (ii) If the students decide to make all the angles equal, what will be the measure of each angle?
- (iii) The students are considering making one angle of the triangle 90 degrees. If one angle is 90 degrees and the second angle is 45 degrees, what will be the third angle?
- (iv) If the students decide to increase the first angle by 10 degrees and decrease the second angle by 10 degrees while keeping the third angle the same, will the park still have a triangular shape?