

DAV PUBLIC SCHOOL, IFFCO, PARADEEP

CLASS-IX

SUB-MATHEMATICS

TOPIC-TRIANGLES

WORKSHEET-ADVANCED

TIME-45 Min

MAX.MARKS:20

Choose the most appropriate option:

(2 × 1=2)

1. D is a point on the side BC of a ΔABC such that AD bisects $\angle BAC$. Then
(A) $BD = CD$ (B) $BA > BD$ (C) $BD > BA$ (D) $CD > CA$
2. In triangles ABC and PQR, $AB = AC$, $\angle C = \angle P$ and $\angle B = \angle Q$. The two triangles are
(A) isosceles but not congruent (B) isosceles and congruent
(C) congruent but not isosceles (D) neither congruent nor isosceles

Fill in the blanks:

(2 × 1=2)

3. ΔPQR is isosceles with $PQ=PR$. If $\angle Q = 50^\circ$, Then the longest side of the triangle is _____.
4. In ΔABC and ΔDEF , $AB = FD$ and $\angle A = \angle D$. The two triangles will be congruent by SAS axiom, if side $BC =$ side _____.

Answer the following question:

(2 × 1 =2)

5. One angle of a triangle is 75° . If the difference of other two angles is 35° , find the measure of the largest angle of the triangle.
6. Sum of two angles of a triangle is equal to the third angle. Find the measure of the third angle.

Short Answer Type Question –I

(2 × 2=4)

7. Prove that perimeter of a triangle is greater than sum of its three altitudes.
8. Bisectors of the angles B and C of an isosceles triangle ABC with $AB = AC$ intersect each other at O. Show that external angle adjacent to $\angle ABC$ is equal to $\angle BOC$.

Short Answer Type Question –II

(2 × 3=6)

9. Prove that in a triangle, other than an equilateral triangle, angle opposite the longest side is greater than $\frac{2}{3}$ of a right angle.

10.S is any point in the interior of ΔPQR . Show that $SQ + SR < PQ + PR$.

Long answer type question:

(1 × 4= 4)

11.Prove that the sum of any two sides of a triangle is greater than twice the median with respect to the third side.