RS Aggarwal Solutions for Class 6 Maths Chapter 16–Triangles

Class 6 - Chapter 16 Triangles

For any clarifications or questions you can write to **info@indcareer.com**

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RS Aggarwal Solutions for Class 6 Maths Chapter 16–Triangles

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RS Aggarwal Solutions for Class 6 Maths Chapter 16–Triangles

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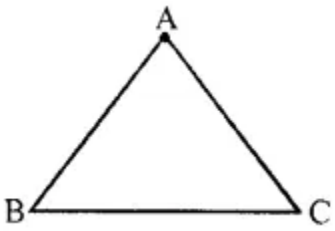
Ex 16A Solutions

Question 1.

Solution:

A, B and C are three non-collinear points in a plane. AB, BC and CA are joined.



(i) The side opposite ∠C is AB

(ii) The angle opposite to the side BC is ∠A

(iii) The vertex opposite to the side CA is B

(iv) The side opposite to the vertex B is CA

Question 2.

Solution:

The measures of two angles of a triangle are 72° and 58°

But measure of three angles of a triangle is 180°

Third angle will be = 180 – (72° + 58°)

= 180° – 130°

= 50°

Question 3.

Solution:

Sum of three angles of a triangle = 180°

Ratio of three angles = 1 : 3 : 5

$$\therefore \text{First angle} = \frac{180^\circ \times 1}{1+3+5} = \frac{180^\circ \times 1}{9} = 20^\circ$$

$$\text{Second angle} = \frac{180^\circ \times 3}{9} = 60^\circ$$

$$\text{Third angle} = \frac{180^\circ \times 5}{9} = 100^\circ$$

Hence, three angles are 20°, 60° and 100°

Ans.

Question 4.

Solution:

Sum of three angles of a right triangle = 180°

Sum of two acute angles = 180°- 90°

= 90°

Measure of one angle = 50°

Second acute angle = 90° – 50° = 40°

Ans.

Question 5.

Solution:

Let the measure of each of the equal angles be x°. Then,

x° + x°+ 110°= 180°

(Angle sum property of a triangle)

=> 2x°+110°= 180°

=> 2x° = 180° – 110° = 70°

=> xO=(702)O=35O

The measure of each of the equal angles is 35°.

Question 6.

Solution:

Let the three angles of a triangle be ∠A, ∠B, ∠C. Then, ∠A = ∠B + ∠C

Adding ∠A to both sides, we get ∠A + ∠A = ∠A + ∠B + ∠C

=> 2 ∠A = 180°

(Angle sum property of a triangle)

=> ∠A = (1802)O=90O

One of the angles of the triangle is a right angle.

Hence, the triangle is a right triangle

Question 7.

Solution:

In a ΔABC,

$3\angle A = 4\angle B = 6\angle C = 1$ (say)

$$\therefore \quad \angle A = \frac{1}{3}$$

$$\angle B = \frac{1}{4}$$

$$\angle C = \frac{1}{6}$$

$$\therefore \text{ Ratio } = \frac{1}{3} : \frac{1}{4} : \frac{1}{6} = \frac{4:3:2}{12}$$

(LCM of 3, 4, 6 = 12)

$$= 4 : 3 : 2$$

Sum of angles $\Delta ABC = 180^\circ$

$$\therefore \angle A = \frac{180^\circ \times 4}{4+3+2} = \frac{180^\circ \times 4}{9} = 80^\circ$$

$$\angle B = \frac{180^\circ \times 3}{9} = 60^\circ$$

$$\angle C = \frac{180^\circ \times 2}{9} = 40^\circ$$

Hence, angles of ΔABC are 80°, 60° and 40°. **Ans.**

Question 8.

Solution:

(i) It is obtuse triangle.

(ii) It is acute triangle.

(iii) It is right triangle.

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(iv) It is obtuse triangle.

Question 9.

Solution:

(i) It is an isosceles triangle as it has two equal sides.

(ii) It is an isosceles triangle as it has two equal sides.

(iii) It is a scalene triangle as its sides are different in length.

(iv) It is an equilateral triangle as its all sides are equal.

(v) It is an equilateral triangles as its angles are equal, so its sides will also be equal.

(vi) It is an isosceles triangle as its two base angles are equal, so its two sides are equal.

(vii) It is a scalene triangle as its angles are different, so its sides will also be different or unequal.

Question 10.

Solution:

In ΔABC, D is a point on BC and AD is joined

Now we get triangles ΔABC, ΔABD and ΔADC

Question 11.

Solution:

(i) No

(ii) No

(iii) Yes

(iv) No

(v) No

(vi) Yes.

Question 12.

Solution:

(i) three, three, three.

(ii) 180°

(iii) different

(iv) 60°

(v) equal

(vi) perimeter.

Ex 16B Solutions

Objective questions

Mark against the correct answer in each of following.

Question 1.

Solution:

(c) ∵ It has three sides and three angles i.e. six.

Question 2.

Solution:

(b) ∵ Sum of three angles of a triangle is 180°.

Question 3.

Solution:

(b) ∵ Largest angle

$=180O\times\frac{4}{2+3+4}=180O\times\frac{4}{9}$

= 80°

Question 4.

Solution:

(d) ∵ A triangle has 180° and if two angles are complementary i.e. sum of two angles is 90°, then third angle will be 180° – 90° = 90°.

Question 5.

Solution:

(c) ∵ Sum of three angles is 180° and sum of two equal angles = 70° + 70° = 140°, then third angle will be 180°- 140° = 40°.

Question 6.

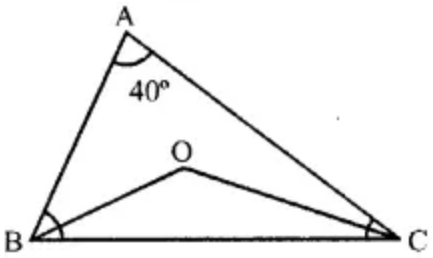
Solution:

(c) ∵ A scalene triangle has different sides.

Question 7.

Solution:

In an isosceles ΔABC, ∠B = ∠C and bisector of ∠B and ∠C meet at O and ∠A = 40°



$$\therefore \angle B = \angle C = \frac{(180^\circ - 40^\circ)}{2}$$

$$= \frac{140^\circ}{2} = 70^\circ$$

$$\therefore \frac{1}{2}\angle B = \frac{1}{2}\angle C = \frac{70^\circ}{2} = 35^\circ$$

Now in ΔOBC

$$\angle BOC + \angle OBC + \angle OCB = 180^\circ$$

$$\angle BOC + \frac{1}{2}\angle B + \frac{1}{2}\angle C = 180^\circ$$

$$\Rightarrow \angle BOC + 35^\circ + 35^\circ = 180^\circ$$

$$\Rightarrow \angle BOC = 180^\circ - 70^\circ = 110^\circ \qquad \text{(a)}$$

Question 8.

Solution:

Side of a triangle are in the ratio 3:2:5 and perimeter = 30 m

Length of longest side = 30×53+2+5

= 30×510 cm

= 15 cm (b)

Question 9.

Solution:

Two angles of a triangle are 30° and 25° But sum of three angles of a triangle – 180°

Third angle = 180° – (30 + 25°)

= 180° – 55° = 125° (d)

Question 10.

Solution:

Each angles of an equilateral triangle = 60°

as each angle of an equilateral triangle are equal

Each angle = 1803 = 60° (c)

Question 11.

Solution:

In the figure, P lies on AB

Its lies on the ∆ABC (c)

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He was born on January 2, 1946 in a village of Delhi. He graduated from Kirori Mal College, University of Delhi. After completing his M.Sc. in Mathematics in 1969, he joined N.A.S. College, Meerut, as a lecturer. In 1976, he was awarded a fellowship for 3 years and joined the University of Delhi for his Ph.D. Thereafter, he was promoted as a reader in N.A.S. College, Meerut. In 1999, he joined M.M.H. College, Ghaziabad, as a reader and took voluntary retirement in 2003. He has authored more than 75 titles ranging from Nursery to M. Sc. He has also written books for competitive examinations right from the clerical grade to the I.A.S. level.

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