RS Aggarwal Solutions for Class 10 Maths Chapter 4 Exercise 4.6: RS Aggarwal Solutions for Class 10 Maths Chapter 4 Exercise 4.6 help students learn more about triangles. This exercise covers special triangle properties, using the Pythagorean Theorem, and applying similarity rules to solve harder problems.

Each solution is designed to explain clearly and step-by-step so students can understand easily. By practicing these solutions, students improve their geometry skills and feel more confident solving triangle problems. These exercises are important for building a strong foundation in math and preparing well for exams.

RS Aggarwal Solutions for Class 10 Maths Chapter 4 Exercise 4.6 Overview

The RS Aggarwal Solutions for Class 10 Maths Chapter 4 Exercise 4.6 prepared by subject experts of Physics Wallah provide detailed guidance on advanced concepts related to triangles. These solutions are created to provide clear explanations and detailed steps for solving problems involving special triangle properties, the Pythagorean Theorem, and similarity criteria.

They are designed to help students understand these concepts effectively and apply them confidently in solving complex geometry problems. With a focus on clarity and accuracy, these expert-prepared solutions ensure that students develop a strong grasp of geometric principles, enhancing their problem-solving abilities and preparing them thoroughly for exams.

RS Aggarwal Solutions for Class 10 Maths Chapter 4 Triangles Exercise 4.6 PDF

Here we have provided RS Aggarwal Solutions for Class 10 Maths Chapter 4 Triangles Exercise 4.6 for the ease of students so that they can prepare better for their upcoming exams –

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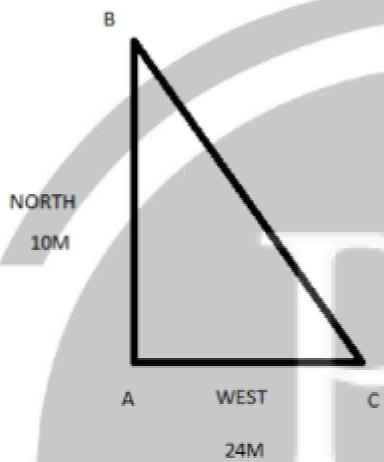
RS Aggarwal Solutions for Class 10 Maths Chapter 4 Triangles Exercise 4.6

Below we have provided RS Aggarwal Solutions for Class 10 Maths Chapter 4 Triangles Exercise 4.6 for the ease of the students –

Question 1.

Solution: c



Since the man goes C to A = 24 m west and then A to B = 10 m north, he is forming a right angle triangle with respect to starting point C.

His distance from the starting point can be calculated by using Pythagoras theorem

$(AC)^2 = (AB)^2 + (BC)^2$

$\Rightarrow (AC)^2 = (24)^2 + (10)^2$

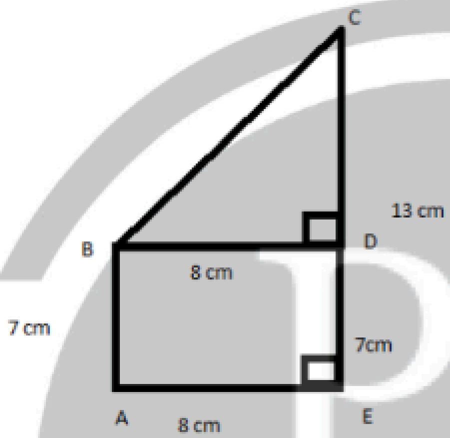
$\Rightarrow (AC)^2 = 576 + 100$

$\Rightarrow (AC)^2 = 676$

$\Rightarrow AC = 26$

Question 2 .

Solution: B



Let AB and CE be the two poles of the height 13 cm and 7 cm each which are perpendicular to the ground. The distance between them is 8 cm.

Now since CE and AB are ⊥ ground AE

BD ⊥ to CE and BD = 8 cm

Top of pole AB is B and top of pole CE is C

Now Δ BDC is right angled at D and BC, the hypotenuse is the distance between the top of the poles and CD = 13 – 7 = 6

$(BC)^2 = (BD)^2 + (CD)^2$

$\Rightarrow (BC)^2 = 64 + 36$

$\Rightarrow (BC)^2 = 100$

$\Rightarrow (BC) = 10$ cm

The distance between the top of the poles is 10 cm

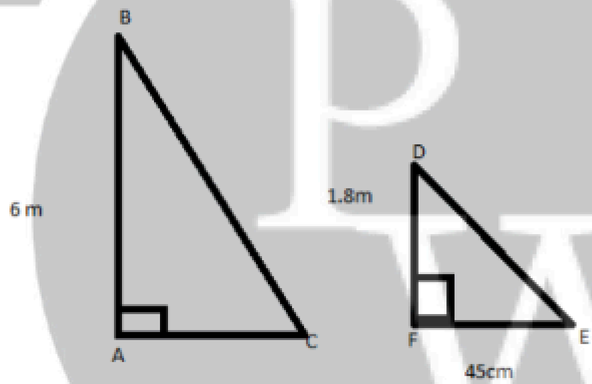
Question 3.

Solution: C

Let DF be the stick of 1.8 m height and AB be the pole of 6 m height.

AC and FE are the shadows of the pole and stick respectively.

FE = 45cm = .45 m



Since the shadows are formed at the same time, the two Δs are similar by AA similarity criterion

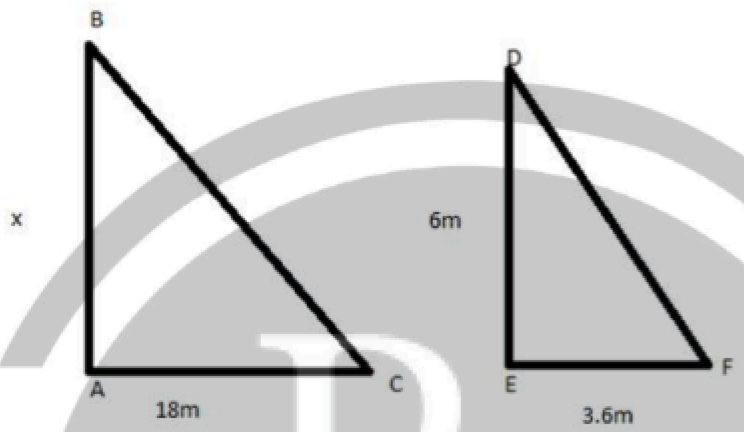
So $\frac{AB}{DF} = \frac{AC}{FE} = \frac{BC}{DE}$

$\Rightarrow \frac{6}{1.8} = \frac{x}{45}$

$\Rightarrow$ x = 1.5 m

Question 4 .

Solution: D



Let DE be the pole of 6 m length casting shadow of 3.6 m . Let AB be the tower x meter height casting shadow of 18mat the same time.

Since pole and tower stands vertical to the ground, they form right angled triangle with ground.

Δ ABC and Δ EDF are similar by AA similarity criterion

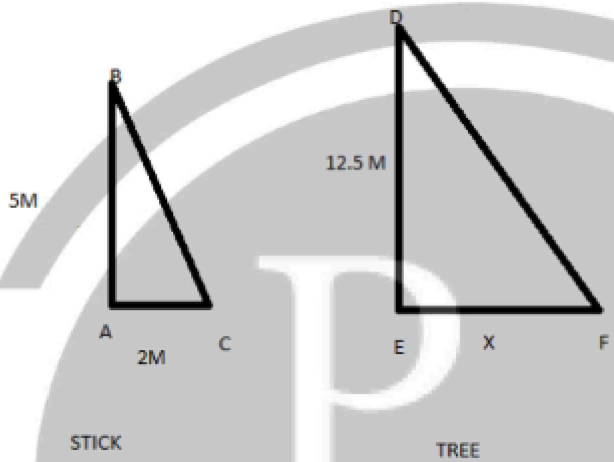
∴ $x/6 = 18/3.6$

⇒ $x = 30$

The height of the tower is 30 m

Question 5.

Solution: D



SINCE BOTH the tree and the stick are forming shadows at the same time the sides of the triangles so formed, would be in same ration ∵ of AA similarity criterian

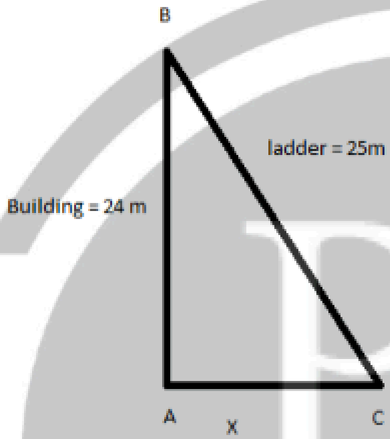
$12.5 / 5 = x / 2$

$\Rightarrow x = 5$

Shadow of the tree would be 5 m long.

Question 6.

Solution: A



Let BC be the ladder placed against the wall AB. The distance of the ladder from the wall is the base of the right angled triangle as building stands vertically straight to the ground.
By Pythagoras theorem

$(BC)^2 = (AB)^2 + (AC)^2$

$(25)^2 = (24)^2 + (x)^2$

$x = 7$

the distance of ladder from the wall is 7m

Question 7 .

Solution: B

The ΔMOP is right angled at O so MP is hypotenuse

$(MP)^2 = (OM)^2 + (OP)^2$

$(MP)^2 = (16)^2 + (12)^2$

$(MP)^2 = 400$

MP = 20 cm

Δ NMP is right angled at M so NP is the hypotenuse so

$(NP)^2 = (21)^2 + (20)^2$

NP = 29

Question 8

Solution: B

Given (BC) = 25 cm

By Pythagoras theorem

$(BC)^2 = (AB)^2 + (AC)^2$

$(25)^2 = (x + 5)^2 + x^2$

$625 = x^2 + 25 + 10x + x^2 \because (a + b)^2 = a^2 + b^2 + 2ab$

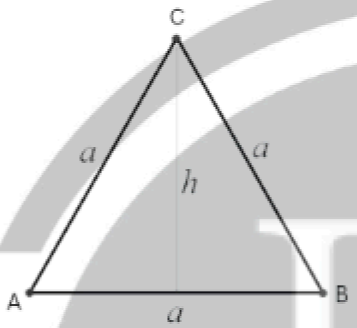
$x^2 + 5x - 300 = 0$

$x (x + 15) - 10(x + 15) = 0$

Since x = -15 is not possible so side of the triangle is 15 cm and 20 cm

Question 9.

Solution: B



Since Δ ABC is an equilateral triangle so the altitude (Height = h) from the C is the median for AB dividing AB into two equal halves of 6 cm each

Now there are two right angled Δs

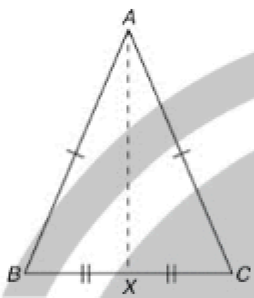
$h^2 = a^2 - 1/2\ (AB)^2$

$h^2 = (12)^2 - 6^2$

$h = 6\sqrt{3}$

Question 10 .

Solution: D



The given triangle is isosceles so the altitude from the one of the vertex is median for the side opposite to it.

AB = AC = 13 cm

h = 5 cm (altitude)

Δ ABX is a right angled triangle, right angled at X

$(AB)^2 = h^2 + (BX)^2$ (BX = 1/2 BC)

$169 = 25 + (BX)^2$

BX = 12

⇒ BC = 24

Question 11 .

Solution: A

By internal angle bisector theorem, the bisector of vertical angle of a triangle divides the base in the ratio of the other two sides.

Hence in ΔABC, we have

$$\frac{AB}{AC} = \frac{BD}{DC}$$

Here AB = 6 cm, AC = 8 cm

So $\frac{AB}{AC} = \frac{6}{8} = \frac{3}{4} = \frac{BD}{DC}$

Question 12 .

Solution: D

By internal angle bisector theorem, the bisector of vertical angle of a triangle divides the base in the ratio of the other two sides"

Hence in ΔABC, we have

$$\frac{AB}{AC} = \frac{BD}{DC}$$

$$\frac{6}{x} = \frac{4}{5}$$

⇒ x = 7.5cm

Question 13.

Solution: B

By internal angle bisector theorem, the bisector of vertical angle of a triangle divides the base in the ratio of the other two sides”

Hence in Δ ABC

$$\frac{AB}{AC} = \frac{BD}{DC}$$

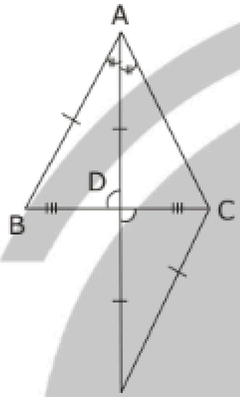
$$\frac{10}{14} = \frac{(6-x)}{x}$$

⇒ 10x -84 + 14x = 0

⇒ x = CD = 3.5 cm

Question 14.

Solution: B



In Δ ABC, AD bisects ∠ A and meets BC in D such that BD = DC

Extend AD to E and join C to E such that CE is ∥ to AB

∠ BAD = ∠ CAD

Now AB ∥ CE and AE is transversal

∠ BAD = ∠ CED (alternate interior ∠s)

But ∠ BAD = ∠ CED = ∠CAD

In Δ AEC

∠ CEA = ∠CAE

∴ AC = CE.................. 1

In Δ ABD and Δ DCE

∠BAD = ∠CED (alternate interior ∠s)

∠ADB = ∠ CDE (vertically opposite ∠s)

BD = BC (given)

Δ ABD ≅ Δ DCE

AB = EC (CPCT)

AC = EC (from 1)

⇒AB = AC

⇒ ABC is an isosceles Δ with AB = AC

Benefits of RS Aggarwal Solutions for Class 10 Maths Chapter 4 Exercise 4.6

The RS Aggarwal Solutions for Class 10 Maths Chapter 4 Exercise 4.6 provide several benefits to students:

Step-by-Step Guidance: Each solution provides clear, step-by-step explanations, making it easier for students to grasp complex topics and solve problems effectively.

Enhanced Problem-Solving Skills: By practicing these solutions, students improve their ability to analyze and solve challenging geometry problems related to triangles.

Confidence Building: Regular practice with these solutions builds students confidence in applying geometric principles and techniques, preparing them well for exams.

Comprehensive Preparation: The solutions cover all aspects of Exercise 4.6, ensuring thorough preparation for assessments and future math studies.

Expertly Prepared: Prepared by subject experts, these solutions ensure accuracy and alignment with the curriculum, providing reliable resources for study and revision.

Accessible Learning: The solutions are presented in a simple and accessible language, making it easier for students to grasp complex mathematical concepts.