SIMILAR TRIANGLES

CASE STUDY 1:

Vijay's House   Tower

Ajay's House
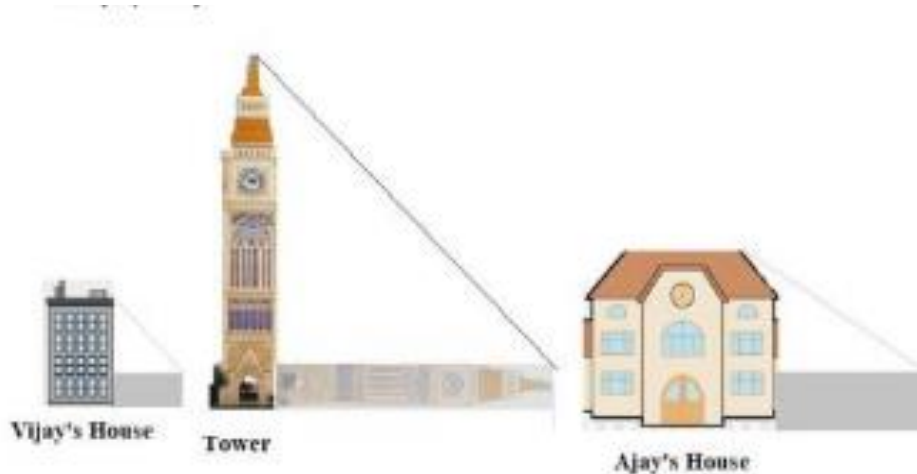
Vijay is trying to find the average height of a tower near his house. He is using the properties of similar triangles.The height of Vijay's house if 20m when Vijay's house casts a shadow 10m long on the ground. At the same time, the tower casts a shadow 50m long on the ground and the house of Ajay casts 20m shadow on the ground.

1. What is the height of the tower?
a) 20m
b) 50m
c) 100m
d) 200m
2. What will be the length of the shadow of the tower when Vijay's house casts a shadow of 12m?
a) 75m
b) 50m
c) 45m
d) 60m
3. What is the height of Ajay's house?
a) 30m
b) 40m
c) 50m
d) 20m
4. When the tower casts a shadow of 40m, same time what will be the length of the shadow of Ajay's house?
a) 16m
b) 32m
c) 20m
d) 8m
5. When the tower casts a shadow of 40m, same time what will be the length of the shadow of Vijay's house?
a) 15m
b) 32m
c) 16m
d) 8m

ANSWER:

1. c)100m
2. d)60m
3. b)40m
4. a)16m
5. d) 8m

CASE STUDY 2:

Rohan wants to measure the distance of a pond during the visit to his native. He marks points A and B on the opposite edges of a pond as shown in the figure below. To find the distance between the points, he makes a right-angled triangle using rope connecting B with another point C are a distance of 12m, connecting C to point D at a distance of 40m from point C and the connecting D to the point A which is are a distance of 30m from D such the $\angle ADC=90^0$.
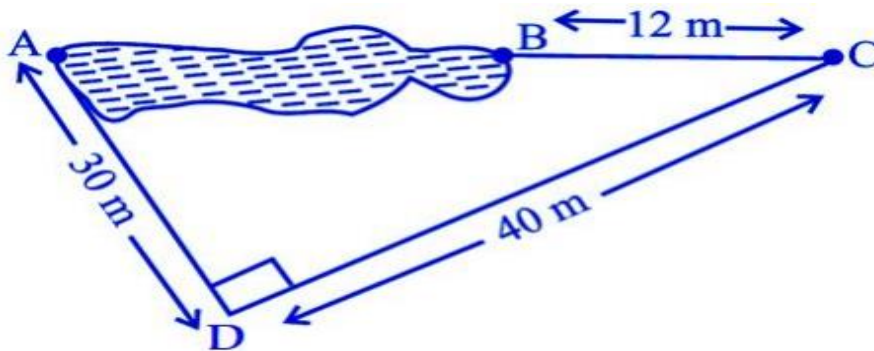
1. Which property of geometry will be used to find the distance AC?

a) Similarity of triangles

b) Thales Theorem

c) Pythagoras Theorem

d) Area of similar triangles

2. What is the distance AC?

a) 50m

b) 12m

c) 100m

d) 70m

3. Which is the following does not form a Pythagoras triplet?

a) (7,24,25)

b) (15,8,17)

c) (5,12,13)

d) (21,20,28)

4. Find the length AB?

a) 12m

b) 38m

c) 50m

d) 100m

5. Find the length of the rope used.

a) 120m

b) 70m

c) 82m

d) 22m

ANSWER:

1. c)Pythagoras Theorem
2. a)50m
3. d)(21,20,28)
4. b)38m
5. c)82m