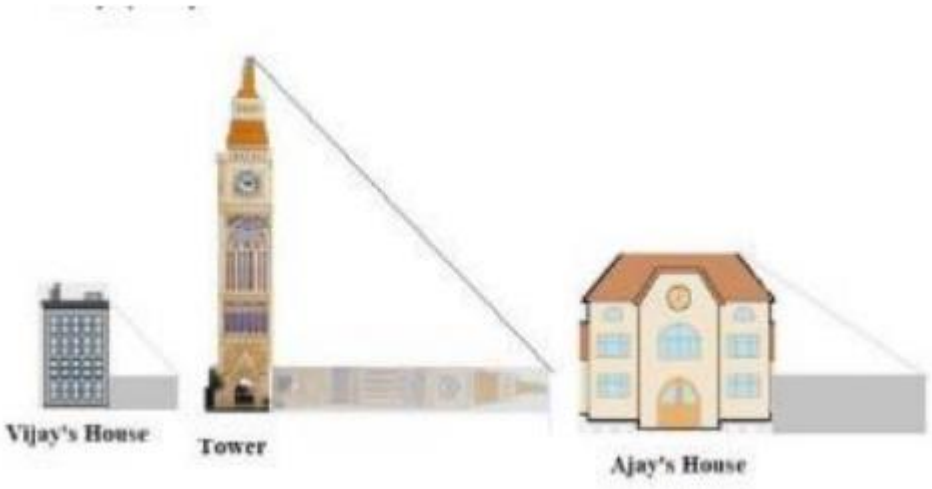
Application of Trigonometry

1.



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?
2. What will be the length of the shadow of the tower when Vijay's house casts a shadow of 12m?
3. When the tower casts a shadow of 40m, same time what will be the length of the shadow of Ajay's house?

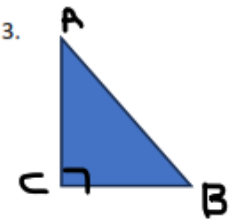
   OR

   When the tower casts a shadow of 40m, same time what will be the length of the shadow of Vijay's house?

ANSWERS.

1. 100 m 2. 60 m 3. 16 m O R 8m

2.

3. 

Assertion (A) : In the given figure Δ ABC is Right Angled at C and

if AC = 60 cm, BC =11 cm

then Sin B = $\frac{60}{61}$

Reason (R) : Sin θ = $\frac{Opposite\ side}{Hypotenuse}$ and using Pythagoras theorem, Hypotenuse = $\sqrt{3600\ +\ 121}$

= $\sqrt{3721}$ = 61 cm

(a) Both A and R are true, R is the correct explanation of A
(b) Both A and R are true, R is not the correct explanation of a
(c) A is true and R is false
(d) A is false and R is true

Answer: (a)