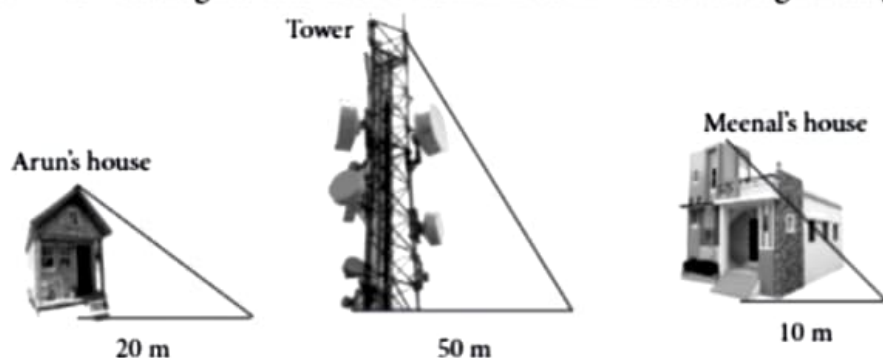


Meenal was trying to find the height of tower near his house. She is using the properties of similar triangles. The height of Meenal's house is 20 m. When Meenal's house casts a shadow of 10 m long on the ground, at the same time, tower casts a shadow of 50 m long and Arun's house casts a shadow of 20 m long on the ground as shown below.



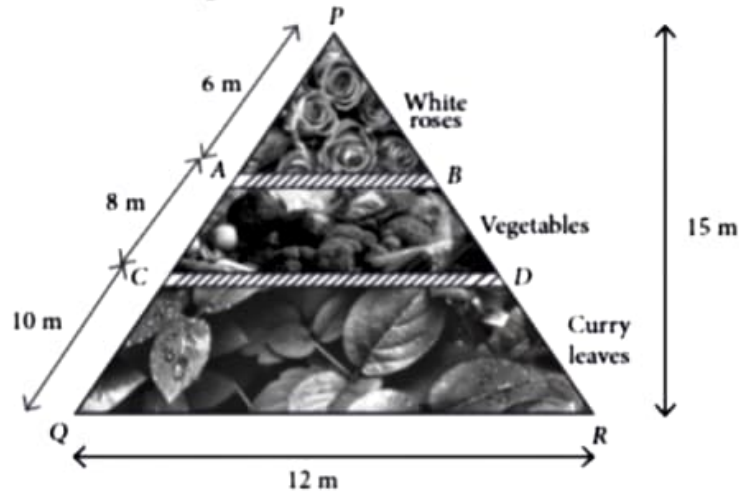
Based on the above information, answer the following questions.

- (i) What is the height of tower?
 - (a) 100 m
 - (b) 50 m
 - (c) 15 m
 - (d) 45 m
- (ii) What will be the length of shadow of tower when Meenal's house casts a shadow of 15 m?
 - (a) 45 m
 - (b) 70 m
 - (c) 75 m
 - (d) 72 m
- (iii) Height of Arun's house is
 - (a) 80 m
 - (b) 75 m
 - (c) 60 m
 - (d) 40 m
- (iv) If tower casts a shadow of 40 m, then find the length of shadow of Arun's house.
 - (a) 18 m
 - (b) 16 m
 - (c) 17 m
 - (d) 14 m
- (v) If tower casts a shadow of 40 m, then what will be the length of shadow of Meenal's house?
 - (a) 7 m
 - (b) 9 m
 - (c) 4 m
 - (d) 8 m

Gardening in the Backyard

2

In the backyard of house, Shikha has some empty space in the shape of a $\triangle PQR$. She decided to make it a garden. She divided the whole space into three parts by making boundaries AB and CD using bricks to grow flowers and vegetables where $AB \parallel CD \parallel QR$ as shown in figure.



Based on the above information, answer the following questions.

(i) The length of AB is

- (a) 3 m (b) 4 m (c) 5 m (d) 6 m

(ii) The length of CD is

- (a) 4 m (b) 5 m (c) 6 m (d) 7 m

(iii) Area of whole empty land is

- (a) 90 m^2 (b) 60 m^2 (c) 32 m^2 (d) 72 m^2

(iv) Area of $\triangle PAB$ is

- (a) $\frac{45}{4} \text{ m}^2$ (b) $\frac{45}{8} \text{ m}^2$ (c) $\frac{8}{45} \text{ m}^2$ (d) $\frac{4}{45} \text{ m}^2$

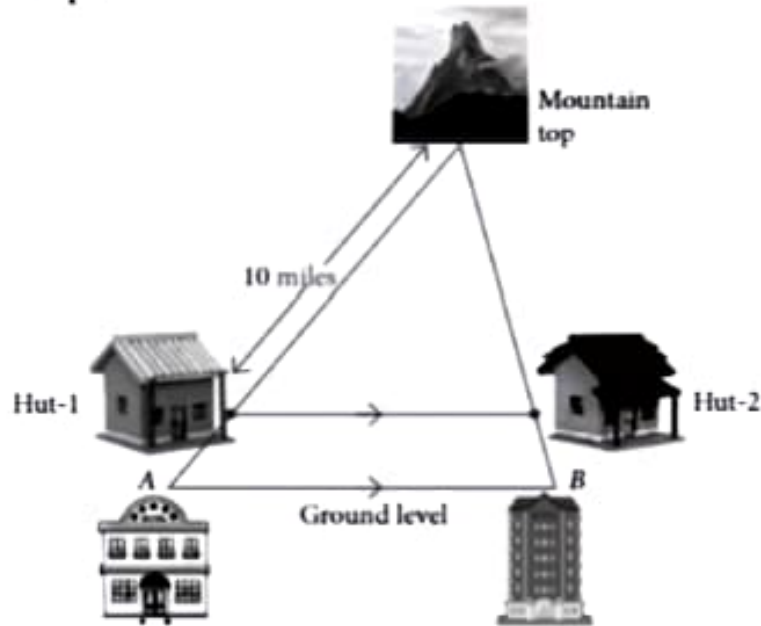
(v) Area of $\triangle PCD$ is

- (a) $\frac{12}{245} \text{ m}^2$ (b) $\frac{245}{12} \text{ m}^2$ (c) $\frac{243}{8} \text{ m}^2$ (d) $\frac{245}{8} \text{ m}^2$

Mountain Trekking

Two hotels are at the ground level on either side of a mountain. On moving a certain distance towards the top of the mountain two huts are situated as shown in the figure. The ratio between the distance from hotel *B* to hut-2 and that of hut-2 to mountain top is 3 : 7.

3



Based on the above information, answer the following questions.

- (i) What is the ratio of the perimeters of the triangle formed by both hotels and mountain top to the triangle formed by both huts and mountain top?
- (a) 5 : 2 (b) 10 : 7 (c) 7 : 3 (d) 3 : 10
- (ii) The distance between the hotel A and hut-1 is
- (a) 2.5 miles (b) 29 miles (c) 4.29 miles (d) 1.5 miles
- (iii) If the horizontal distance between the hut-1 and hut-2 is 8 miles, then the distance between the two hotels is
- (a) 2.4 miles (b) 11.43 miles (c) 9 miles (d) 7 miles
- (iv) If the distance from mountain top to hut-1 is 5 miles more than that of distance from hotel B to mountain top, then what is the distance between hut-2 and mountain top?
- (a) 3.5 miles (b) 6 miles (c) 5.5 miles (d) 4 miles
- (v) What is the ratio of areas of two parts formed in the complete figure?
- (a) 53 : 21 (b) 10 : 41 (c) 51 : 33 (d) 49 : 51