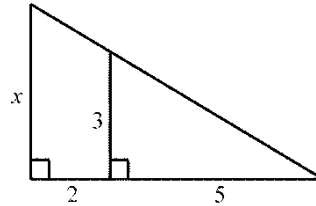


Review - Similar Triangles, Pythagoras and Trig

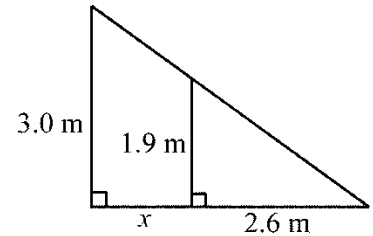
1. Solve for the unknown value.

a) $\frac{h}{2.5} = \frac{21}{10.5}$ [answer: 5]

b) [answer 4.2]

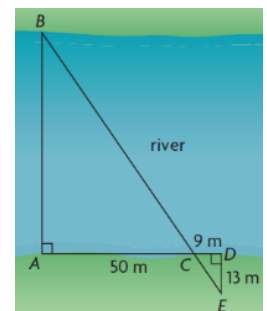


c) [answer 1.5 m]



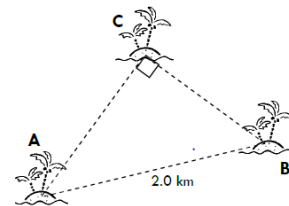
2. Stephanie casts a shadow of 1.2 m and she is 1.8 m tall. A wind turbine casts a shadow of 10 m at the same time that Stephanie measured her shadow. Draw a diagram of this situation and then calculate how tall the wind turbine is. [answer: 15 m]

3. Surveyors set up posts at points A, B, C, D and E to help them measure the width of the river. Then took measurements relative to the posts. Determine the width of the river from A to B. [answer: 72.2 m]

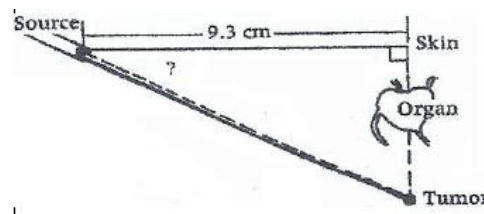


4. A 15 ft ladder is placed against a building. The bottom of the ladder is 4 ft out from the wall. How far up the wall does the ladder reach? [answer: 14.5 ft]

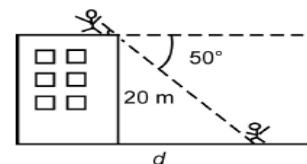
5. Two islands, A and B, are 2.0 km apart. How far is a third, C, from A if $\angle C = 90^\circ$ and $\angle A = 35^\circ$?
[answer: 1.6 km]



6. A beam of gamma rays is to be used to treat a tumour that is 4.3 cm beneath a patient's skin. To avoid damaging a vital organ, the radiologist moves the source over 9.3 cm. At what angle must she aim the gamma ray source? [answer: 24.8°]



7. Travis is on the roof of a building, while his friend Landen is on the ground. Travis can see Landen at a 50° angle of depression. The vertical height of the building is 20 m. What is the horizontal distance from the base of the building to where Landen is standing? [answer: 16.8 m]



8. A hiker is 500 m from the base of a radio tower. The angle of elevation to the top of the tower is 20° . Find the height of the tower if the hiker is 1.6 m tall. [answer: 183.6 m]

9. From the opposite ends of the Simplon Tunnels between Italy and Switzerland, the angles of elevation of the peak are 44° and 33° . If the peak is 2130 m above the tunnel, find the length of the tunnel. [answer: 5485.59 m]

