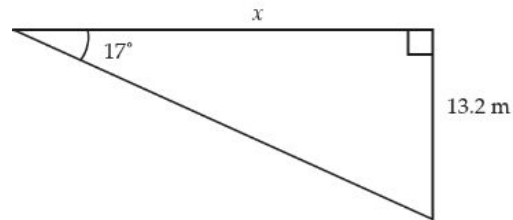


Chapter 4 Challenge

Multiple Choice: Write the letter of your choice in the box provided.

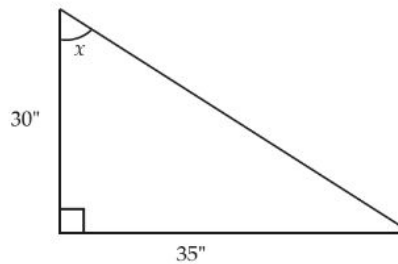
1. **Solve** for x .

- a. 4.0 meters
- b. 13.8 meters
- c. 43.2 meters
- d. 45.1 meters



2. **Solve** for x .

- a. 31.0 degrees
- b. 49.4 degrees
- c. 59.0 degrees
- d. Undefined

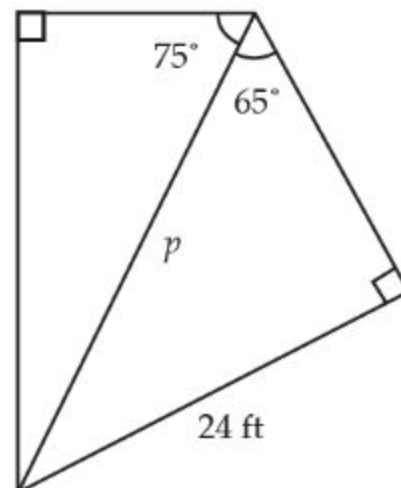


3. The Statue of Liberty is 305 ft tall, from the ground to the top of her torch. If you stood 80 ft away, what would the angle of elevation be? (1 point)

- a. 14.7°
- b. 74.8°
- c. 75.3°
- d. 15.2°

4. The value of **side p** is

- A. 20 feet
- B. 26 feet
- C. 28 feet
- D. 30 feet

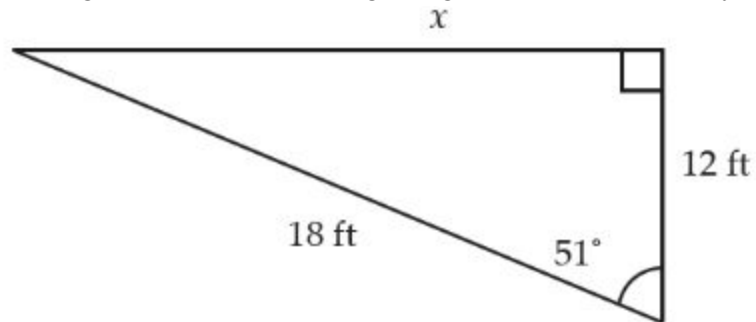


5. Chantelle works for a theatre lighting crew. A light has to be aimed at an area shown by point P in the diagram. At what angle of depression should Chantelle aim the light?

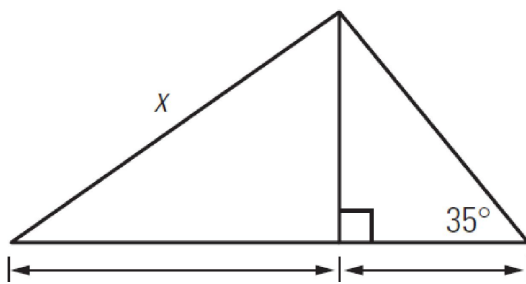
- 51.2 degrees
- 49.8degrees
- 49.3 degrees
- 51.6 degrees

Short Answer:

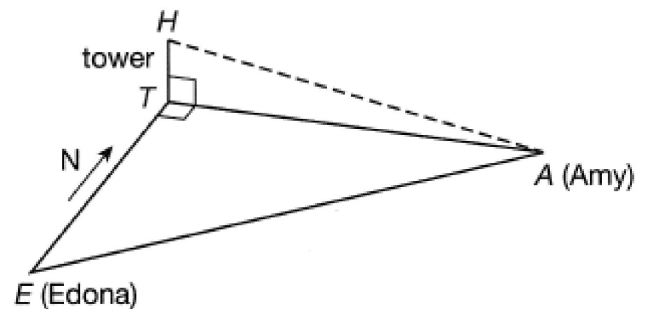
5. Solve for the missing side, x , in the following triangle **in two different ways**. (4 marks)



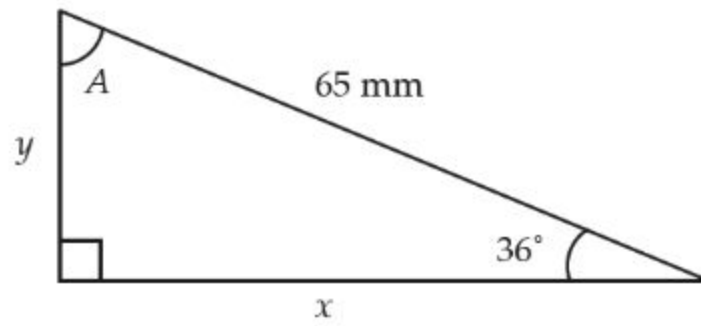
7. Calculate the length of x . *Hint: You will have to find something else first.*



8. A Cell tower lies straight north of Edona's house. Edona walks 1.5 km to Amy's house, travelling at an angle of 40° east of north. The tower is straight west of Amy's house. When she gets to Amy's house, she notes that the angle of elevation to the top of the tower is 10° .
- Label the diagram with the information given.



- How tall is the tower?
 - Is the angle of elevation from Edona's house to the top of the tower bigger or smaller than 10° ? Provide proof for your answer.
9. **Solve** the following right triangle for the labelled unknowns. Round your answers to one decimal place if necessary. (5 marks)



10. A surveyor measures a distance of 12.45 meters to the base of a building. The angle of elevation to the top of the building is 78 degrees.

a. Draw out this word problem (2 marks)

b. Calculate the buildings height (1 mark)