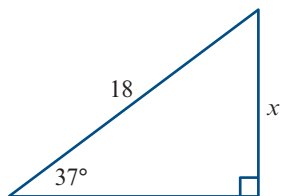


Chapter 11 Applications of trigonometry: Assignment

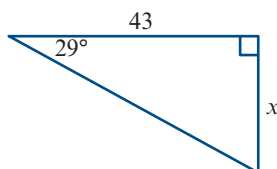
Name: _____

1 Find the value of x , to one decimal place, in each of the following:

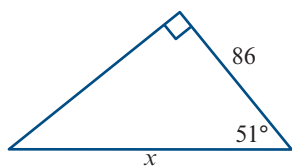
a



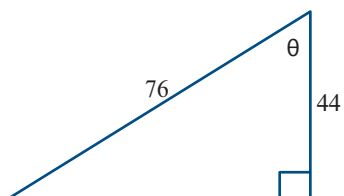
b



c

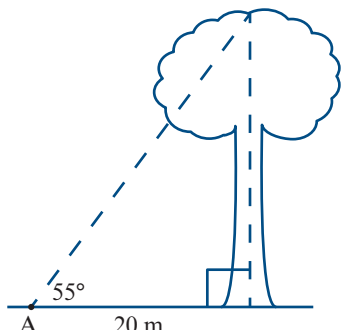


2 Find the unknown angle θ , to one decimal place.



Chapter 11 Applications of trigonometry: **Assignment**

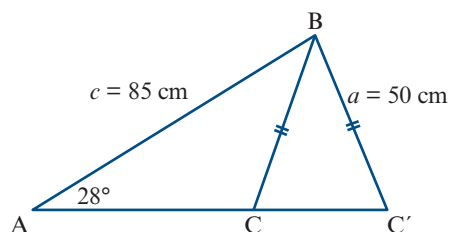
- 3 At a point A located 20 metres on level ground from the base of a tree, the angle of elevation to the top of the tree is 55° . Answer to one decimal place.



- a If the tree broke at its base, how far would a person have to be from the base to be safe?
 - b If the angle of elevation to the top of the tree was measured at different distances from the base, at what angles would the person be in a safe position? Give reasons or calculations to justify your answer.
 - c A rope is to be secured by a peg 20 metres from the base of the tree and tied half-way up the tree. What length of rope is needed? Ignore the length needed to wrap around the tree and to tie a knot.
- 4 A ship left port P and travelled at 20 km/h on a three figure bearing of 060° . At the same time, a second ship left port P and travelled at 25 km/h on a three figure bearing of 140° . Answer to one decimal place.
- a How far was each ship from the port after 4 hours?
 - b What was the distance between the two ships when they had travelled for 4 hours?
 - c Find the area enclosed by their paths and the line connecting their positions after 4 hours.
- 5 A triangular paddock has sides of 2 km, 3 km and 4 km. Give answers to one decimal place.
- a Find the size of the largest angle made by the sides of the paddock.
 - b Use two different methods to find the area of the paddock.

Chapter 11 Applications of trigonometry: **Assignment**

- 6 In triangle ABC , angle $BAC = 28^\circ$, $c = 85$ cm and $a = 50$ cm.



Find the two possible values for angle C , shown as angle BCA and angle $BC'A$ in the diagram. Give the angles to one decimal place.