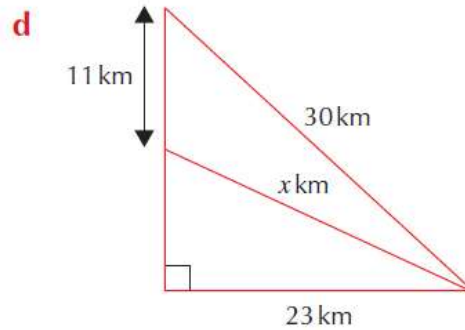
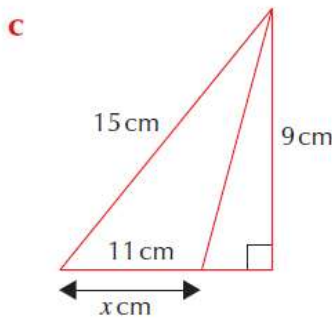
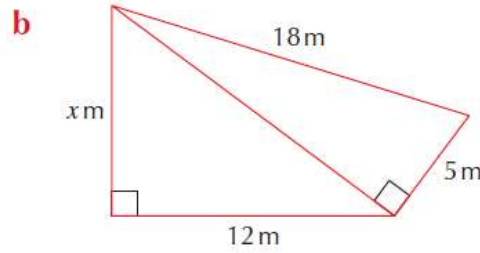
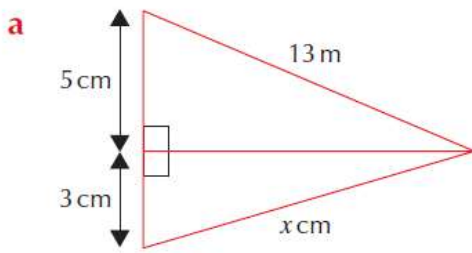
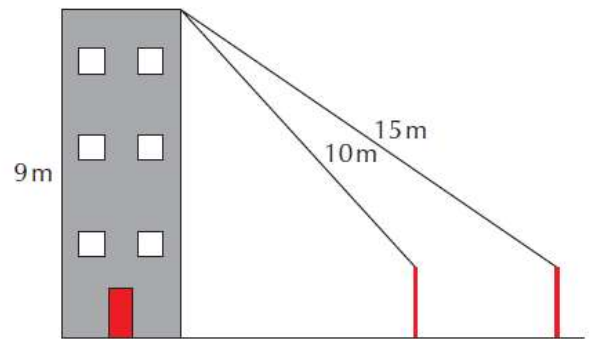


Exercise 20A

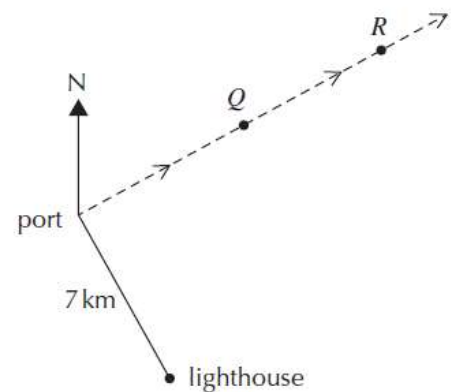
1 Calculate the length of x in each diagram. Give your answers to 2 decimal places.



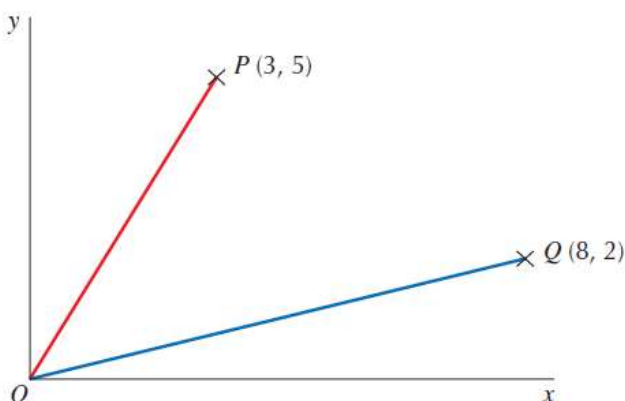
2 Two telegraph poles are 2 m high. They have wires connected to the roof of a building which is 9 m high. How far apart are the two telegraph poles? Give your answer to 2 decimal places.



3 A ship leaves port on a bearing of 063° . A lighthouse is situated 7 km from port on a bearing of 153° . At point Q the ship is 9 km from the lighthouse. At point R the ship is 15 km from the lighthouse. How far apart are points Q and R ? Give your answer to 2 decimal places.

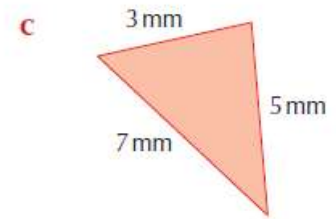
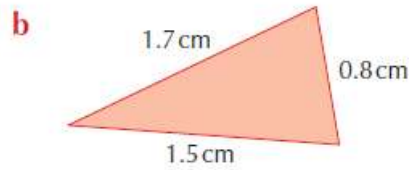
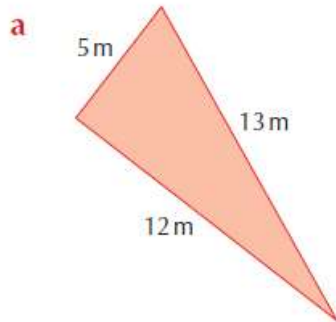


4 OP is perpendicular to PQ . Find the length of PQ . Give your answer to 2 decimal places.

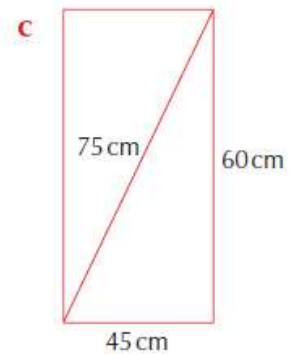
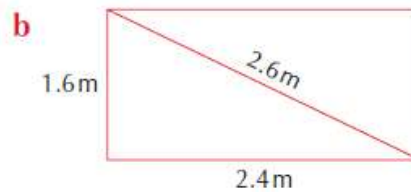
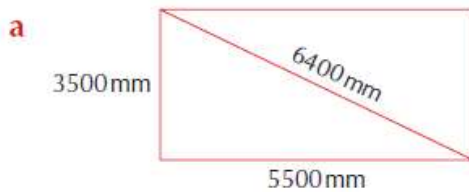


Exercise 20B

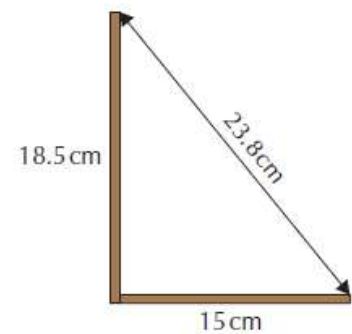
1 Use the converse of Pythagoras' theorem to determine if these triangles are right-angled or not.



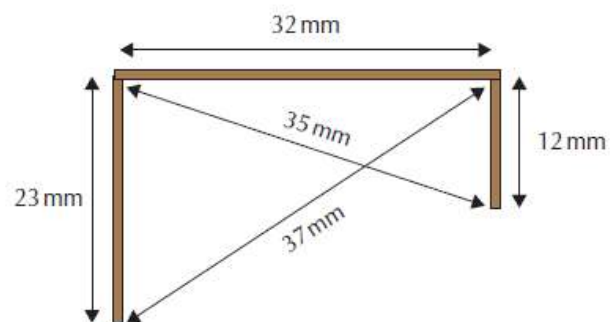
2 These shapes look rectangular but are they? Use the converse of Pythagoras' theorem to check.



3 Fergus has spent his afternoon putting up a shelf, but his brother James says it looks wrong against the wall. Use the dimensions in the picture to decide if the shelf has been put up square to the wall.

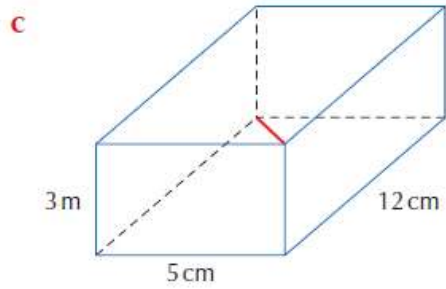
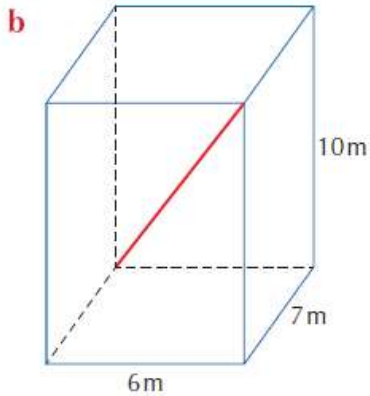
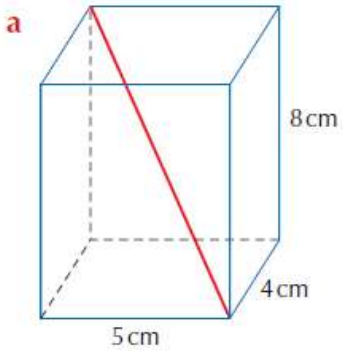


4 A company manufactures brackets for fitting in aeroplanes. It is important that the angles formed are right angles. The Quality Assurance department checks that the product meets the standard. Decide if the Quality Assurance department will send the bracket shown on the right to the aeroplane fitters.

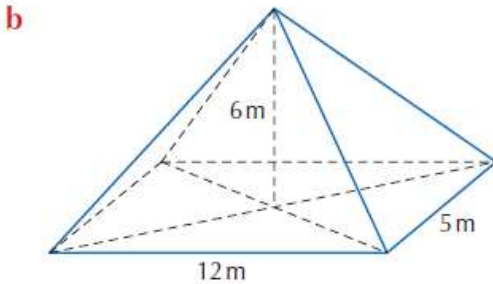
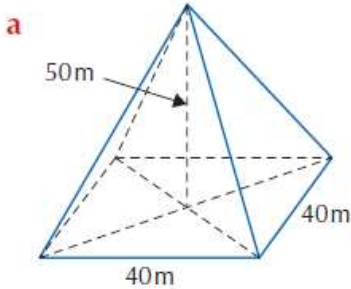


Exercise 20C

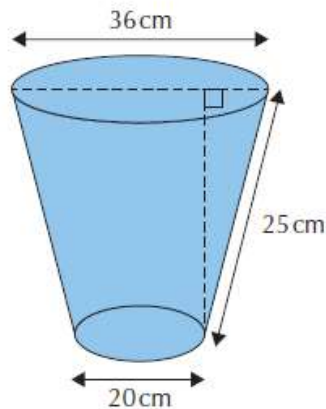
1 For each of the following cuboids, calculate the space diagonal marked. Give your answers to 2 decimal places.



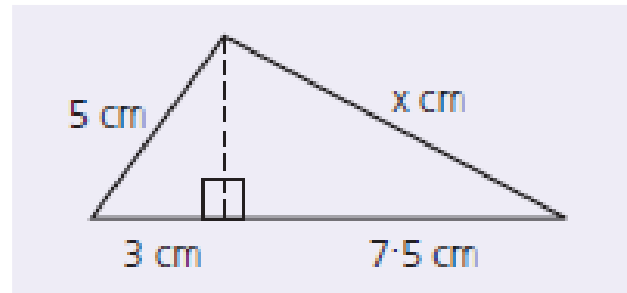
2 Calculate the length of the sloping edge on these pyramids. Give your answers to 2 decimal places.



3 How high is the bin? Give your answer to 3 significant figures.



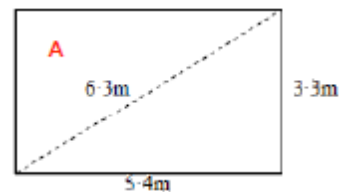
1. Calculate the value of x to 1 decimal place.



2. Two boats A and B are 360m apart.
Boat A is 120m due East of a buoy.
Boat B is due North of the buoy.
How far is boat B from the buoy?



3. A floor plan of a room is shown in the diagram.
Is the room rectangular?



4. ABCDEFGH is a cuboid.
 $AE = 5\text{cm}$, $EH = 9\text{cm}$ and $HG = 6\text{cm}$.
Calculate the length of the line AG.

