

B. Draw a labelled diagram to illustrate each problem, then solve for the unknown using the Theorem of Pythagoras.

1. Calculate the length of the diagonal of a rectangle whose sides measure:

- (a) 14 metres and 48 metres
- (b) 11 centimetres and 60 centimetres

2. Calculate the length of a rectangle that has the following measurements:

- (a) diagonal measure 7.5 metres and width measures 4.5 metres
- (b) diagonal measures 26 centimetres and width measures 10 centimetres

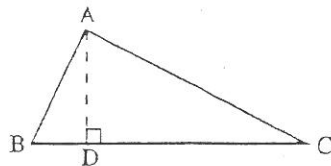
3. A ladder 6.25 metres long rests against a wall at a point 5 metres from the ground. How far is the foot of the ladder from the wall?

4. A square corner lot has sides of 50 metres. Calculate, to the nearest metre, the distance saved in taking a short-cut across the diagonal.

5. Romeo's ladder was 3.125 metres long. When he placed it on the lower edge of Juliette's window, the foot of the ladder was 0.875 metres from the wall. How far was the window above the ground?

6. The diagonal of a rectangular field measure 65 hectometres and the width is 25 hectometres. Find the length of this field.

7. In the diagram below, $AB = 13$ centimetres, $BC = 21$ centimetres and $BD = 5$ centimetres. Using this information, calculate the length of side AC .



8. A pole 7.5 metres high and another pole 4.5 metres high have a wire connecting their tops. If the poles are 4 metres apart, how long is the wire?

9. State in words the Theorem of Pythagoras.

10. A gate is 12 dm long and 5 dm wide. It has a board to reinforce it that runs along its diagonal. How long is this board.?

11. What is the longest straight line that can be drawn on a rectangular piece of paper that is 8 centimetres wide and 15 centimetres long?

12. Calculate the height of an equilateral triangle whose sides are congruent to 10 cm.

13. If each square below represents 1 cm^2 , how long is the zig-zag line from A to E?

