

7.7 REVIEW OF THE PYTHAGOREAN THEOREM

A. Extra Practice. Solve each of the following.

1. Two telephone poles are 60 metres apart. The poles are 42 metres and 60 metres high. What is the distance between the tops of these two poles?

2. The perimeter of a rectangle is 98 centimetres and one of its sides is 9 centimetres. Find the length of the diagonal of this rectangle.

3. A 12.5 metre ramp extends from the ground to the delivery entrance of a building 3.75 metres above the base of a building. How many metres from the side of the building is the foot of the ramp?

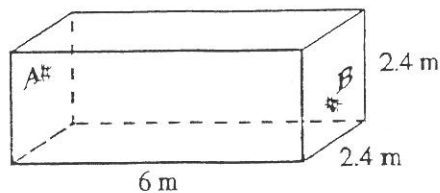
4. A ladder reaches the top of a wall that is 6 metres high. If the base of the ladder is 2.5 metres from the wall, how long is the ladder?

5. A builder is about to cut rafters for a roof of a house. The width of the house is 12 metres and he has to make the roof 2.5 metres higher in the centre than on the sides. If the eaves overhang 0.5 metres, find the total bottom length of each rafter.

6. A baseball diamond is square and the distance between each base is 30 metres. Find the distance from second base to home plate.

7. Can a folded umbrella 98 centimetres long be packed in the bottom of a suitcase 84 centimetres long and 52 centimetres wide?

8. SPIDER'S PROBLEM A room is 6 metres long, 2.4 metres wide and 2.4 metres high. There is a fly on the middle line of one end wall one metre from the floor (at B). There is a spider on the opposite wall one metre from the ceiling and on the middle line of that wall (at A). The fly remains still and the spider catches it by travelling in a straight line from A to B. How far did the spider travel going from A to B?



9. Boat A is 10 km west of boat B. Boat A travels directly north to get to shore. Boat B travels 26 km directly to the same point on shore. How much shorter is Boat A's trip?

10. A square is inscribed in a circle whose diameter is 10 cm. Find the length of the side of the square.

11. A warehouse is 20 m long, 12 m wide and 7 m high. Find (a) the diagonal distance across the floor of the room, and (b) the distance from the southeast corner of the room at the ceiling to the northwest corner of the room at the floor.

12. Find the length of the sides labelled x and y .

