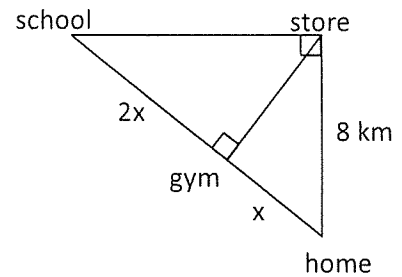


Section 8.1 – 8.3 – More Problems

1. A 12 cm long altitude of a right triangle divides the hypotenuse into two segments, one three times as long as the other. How long is the hypotenuse?

2. How far is it from home, past the gym, to school?



3. Find the altitude of an equilateral triangle with side length ten.

4. A 6 ft ladder is placed against a wall with its base 2 ft from the wall. How high above the ground is the top of the ladder?

5. A person travels 8 mi due north, 3 mi due west, 7 mi due north and 11 mi due east. How far is that person from the starting point?

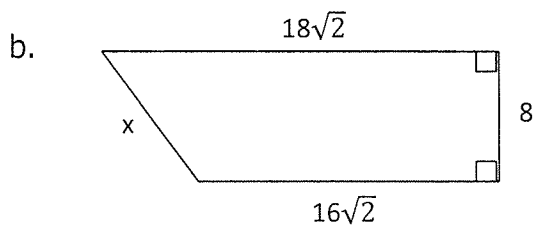
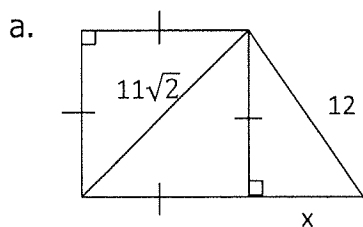
6. Will a fishing rod that collapses to a length of 80 cm fit into a suitcase with dimensions 18 cm x 46 cm x 66 cm?

7. Classify each triangle with the given side lengths as acute, right or obtuse.

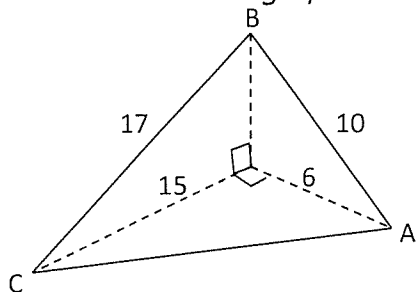
a.  $\sqrt{3}, \sqrt{2}, \sqrt{5}$

b.  $\frac{3}{5}, \frac{4}{5}, 1$

8. Find  $x$ .



9. Decide if  $\triangle ABC$  is right, acute or obtuse. Explain.



10. The shortest side of a triangle has length 14. The other two sides have lengths  $x + 1$  and  $x + 3$ . Find the value of  $x$  that would make the triangle a right triangle and give the lengths of each side.

11. In isosceles  $\triangle DEF$ ,  $DE = EF = 25$  and  $DF = 30$ . Find the length of the altitude of the triangle from vertex  $F$ .

12. Find the length, of the median  $m$  of the triangle below. (Hint: Draw the altitude of the triangle from  $B$ .)

