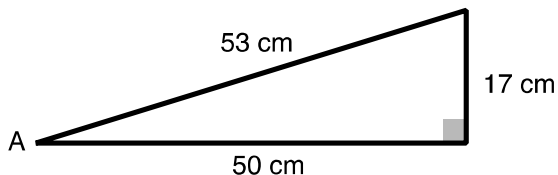


Except where noted, round all side lengths to the nearest tenth and all angles to the nearest degree.

1. In the following right triangle:



- a) What is  $\sin A$  as a fraction? \_\_\_\_\_
- b) What is  $\sin A$  as a decimal rounded to four decimal places? \_\_\_\_\_
- c) What is  $\cos A$  as a fraction? \_\_\_\_\_
- d) What is  $\cos A$  as a decimal rounded to four decimal places? \_\_\_\_\_
- e) What is  $\tan A$  as a fraction? \_\_\_\_\_
- f) What is  $\tan A$  as a decimal rounded to four decimal places? \_\_\_\_\_
- g) What is the measure of  $\angle A$ ? \_\_\_\_\_

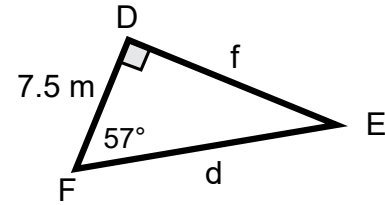
2. A triangle has side lengths of 5 cm, 6 cm, and 8 cm. Is it a right triangle? \_\_\_\_\_

3. Find the indicated sides and angles:

a)  $\angle E =$  \_\_\_\_\_

b)  $f =$  \_\_\_\_\_

c)  $d =$  \_\_\_\_\_

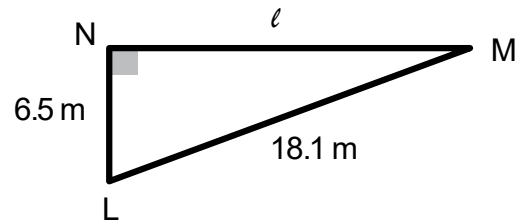


4. Find the indicated sides and angles:

a)  $\angle L =$  \_\_\_\_\_

b)  $\angle M =$  \_\_\_\_\_

c)  $\ell =$  \_\_\_\_\_

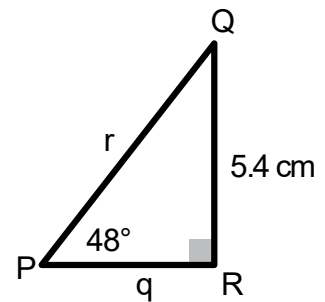


5. Find the indicated sides and angles:

a)  $\angle Q =$  \_\_\_\_\_

b)  $q =$  \_\_\_\_\_

c)  $r =$  \_\_\_\_\_



6. Find the indicated sides and angles:

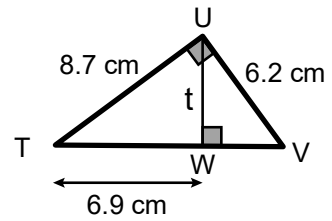
a)  $\angle UTW =$  \_\_\_\_\_

b)  $\angle WUT =$  \_\_\_\_\_

c)  $\angle UVT =$  \_\_\_\_\_

d)  $\angle WUV =$  \_\_\_\_\_

e)  $t =$  \_\_\_\_\_



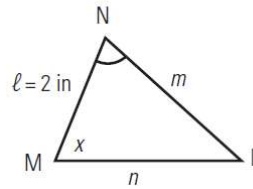
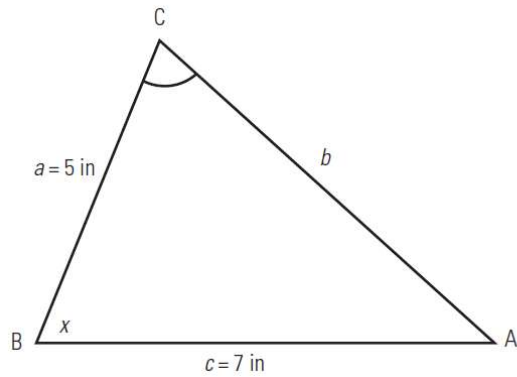
7. A twenty-five foot ladder is positioned against the side of a building. The foot of the ladder is six feet from the base of the building.

a) How high up the side of the building does the ladder reach? \_\_\_\_\_

b) At what angle does the foot of the ladder meet the ground? \_\_\_\_\_

8. A pup tent has a vertical supporting pole 1.5 m long. If the sides of the tent meet the ground at a  $45^\circ$  angle, how wide is the tent? \_\_\_\_\_

9. Given the two triangles shown, find the length of  $n$ .

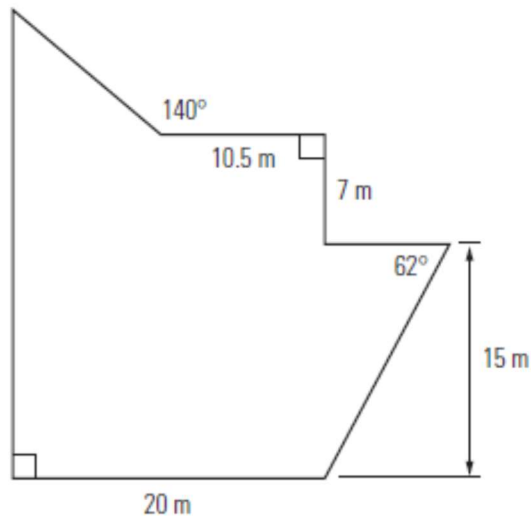


\_\_\_\_\_

10. Jim notices that he casts a shadow 6.5 m long and a telephone pole casts a shadow 43.3 m long. Jim is 1.8 m tall. How tall is the telephone pole?

\_\_\_\_\_

11. Maria wants to pour a concrete patio in her back yard. What is the area of her patio?



\_\_\_\_\_

12. A flagpole is supported by two guy wires, each attached to a peg in the ground 5.25 m from the base of the pole. The guy wires have angles of elevations of  $37^\circ$  and  $43^\circ$ .

a) How much higher up the flagpole is the top guy wire attached?

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b) How long is each guy wire?

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13. A box is 18 inches long by 12 inches wide by 9 inches tall.

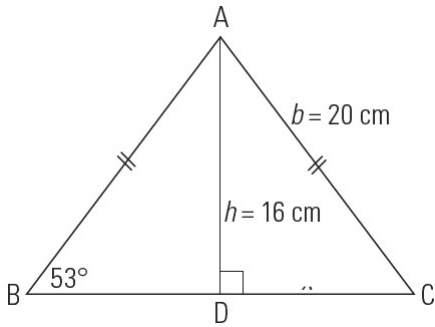
a) What is the length of the longest rod that can be carried in it?

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b) What angle does the rod make with the bottom?

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14. Use the diagram to answer the questions below.



a) What is the length of side BC? \_\_\_\_\_

b) Classify  $\triangle ABC$  by angle measure (acute, right, or obtuse) and by side length (equilateral, isosceles, or scalene).

- \_\_\_\_\_ triangle
- \_\_\_\_\_ triangle

c) Classify  $\triangle ADC$  by angle measure (acute, right, or obtuse) and by side length (equilateral, isosceles, or scalene).

- \_\_\_\_\_ triangle
- \_\_\_\_\_ triangle

1. a)  $\frac{53}{17}$  b) 0.3208 c)  $\frac{50}{17}$  d) 0.9434 e)  $\frac{50}{17}$  f) 0.3400 g) 19°

2. No ( $a^2 + b^2 \neq c^2$ )

3. a)  $\angle E = 33^\circ$  b)  $t = 11.5$  m c)  $d = 13.7$

4. a)  $\angle L = 69^\circ$  b)  $\angle M = 21^\circ$  c)  $t = 16.9$  m

5. a)  $\angle Q = 42^\circ$  q = 4.9 cm r = 7.3 cm

6. a)  $\angle UTW = 38^\circ$  b)  $\angle WUT = 52^\circ$  c)  $\angle UVT = 52^\circ$  d)  $\angle WUV = 38^\circ$  e)  $t = 5.3$  cm

7. a) 24.3 ft b)  $76^\circ$

8. 3.0 m

9. 2.8 in

10. 12.0 m

11. 538 m<sup>2</sup>

12. a) 0.9 m b) 6.6 m and 7.2 m

13. a) 23.4" (or  $23\frac{16}{7}$ ") b) 23°

14. a) 24.0 cm b) acute, isosceles c) right, scalene