Lesson 3.7 - The Law of Sines (practice)

State the number of possible triangles that can be formed using the given measurements.

1) $m\angle A = 31°, c = 20$ mi, $a = 16$ mi

2) $m\angle B = 82°, a = 34$ m, $b = 22$ m

3) $m\angle B = 110°, b = 11$ m, $a = 4$ m

4) $m\angle A = 64°, c = 33$ in, $a = 32$ in

Find each measurement indicated. Round your answers to the nearest tenth.

5) $m\angle A = 64°, m\angle B = 98°, a = 29$ mi
Find b

6) $m\angle A = 57°, c = 35$ cm, $a = 33$ cm
Find b

7) $m\angle C = 128°, b = 35$ in, $c = 35$ in
Find a

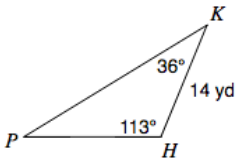
8) $m\angle C = 90°, m\angle B = 30°, b = 15$ in
Find c

9) In $\triangle TRS, m\angle S = 118°, s = 16$ ft, $r = 5$ ft
Find $m\angle R$

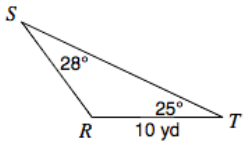
10) In $\triangle KHP, m\angle K = 27°, p = 35$ m, $k = 18$ m
Find $m\angle P$

Solve each triangle. Round your answers to the nearest tenth.

13)

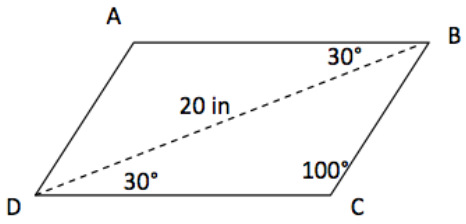


14)

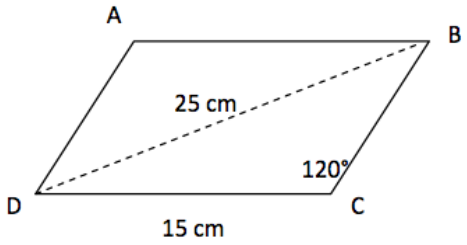


Lesson 3.7 - The Law of Sines (practice)

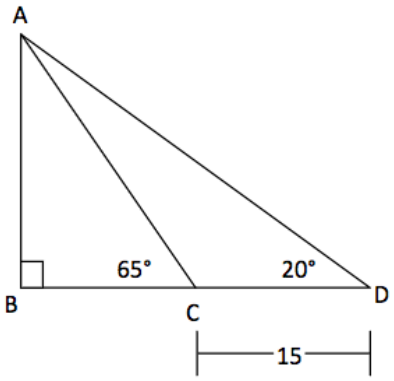
17. For parallelogram ABCD below find BC to the nearest tenth.



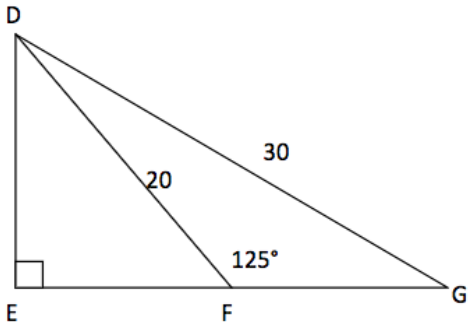
18. For parallelogram ABCD below find $m\angle DBC$ to the nearest whole degree.



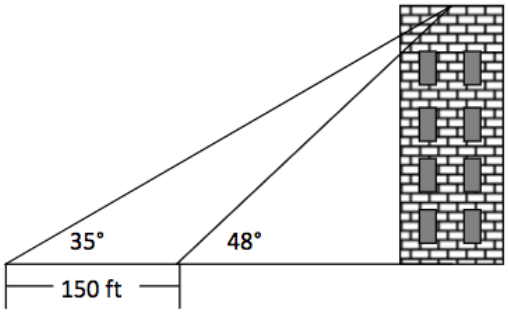
19. For the figure below find BC to the nearest whole number. $CD=15$.



20. For the figure below find $m\angle EDG$ to the nearest whole degree.



21. Find the height of the building in the figure below to the nearest foot.



Lesson 3.7 - The Law of Sines (practice)

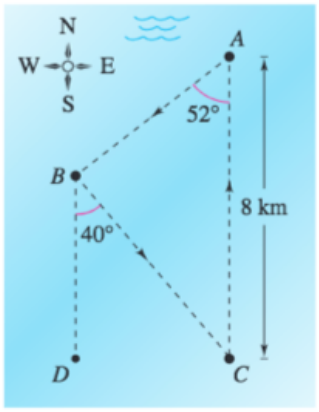
Determine the number of possible triangles that exist given the following information: **a = 35, b = 20 and A = 33°**. If more than one triangle exists, solve for missing sides/angles for both triangles.

Determine the number of possible triangles that exist given the following information: **a = 18, b = 32 and A = 65°**. If more than one triangle exists, solve for missing sides/angles for both triangles.

Determine the number of possible triangles that exist given the following information: **a = 10, b = 20 and A = 28°**. If more than one triangle exists, solve for missing sides/angles for both triangles.

Lesson 3.7 - The Law of Sines (practice)

The course for a boat race starts at point A and proceeds in the direction S 52° W to point B, then in the direction S 40° E to point C, and finally back to A, as shown in Figure 6.9. Point C lies 8 kilometers directly south of point A. Approximate the total distance of the race course.



Height You are standing 40 meters from the base of a tree that is leaning 8° from the vertical away from you. The angle of elevation from your feet to the top of the tree is 20° 50′.

(a) Draw a triangle that represents the problem. Show the known quantities on the triangle and use a variable to indicate the height of the tree.

(b) Write an equation involving the unknown height of the tree.

(c) Find the height of the tree.

To measure the length d of a lake (see Fig. 7), a baseline AB is established and measured to be 125 meters. Angles A and B are measured to be 41.6° and 124.3°, respectively. How long is the lake?