

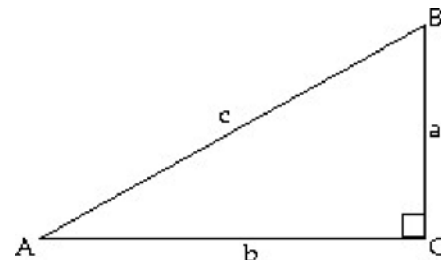
Student: _____
Date: _____
Time: _____

Instructor: Fred Khoury
Course: Math 2312-1000 Precalculus (Fall - 2015)
Book: Lial: College Algebra and Trigonometry, 4e

Assignment: Quiz Sec 2.3

1. Use the following to solve the right triangle. Round side lengths to two decimal places.

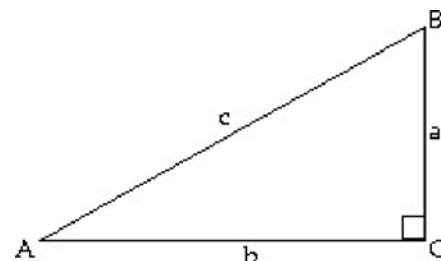
$$B = 58.45^\circ, a = 404.5 \text{ m}$$



- ☐ A. $A = 31.55^\circ$; $b = 699.24 \text{ m}$; $c = 759.49 \text{ m}$
☐ B. $A = 31.55^\circ$; $b = 618.34 \text{ m}$; $c = 773.06 \text{ m}$
☐ C. $A = 31.55^\circ$; $b = 658.79 \text{ m}$; $c = 773.06 \text{ m}$
☐ D. $A = 31.55^\circ$; $b = 658.79 \text{ m}$; $c = 785.71 \text{ m}$

2. Use the following to solve the right triangle. Give angles in degrees and minutes. Round the missing side length to one decimal place.

$$a = 18.5 \text{ cm}, b = 22.7 \text{ cm}$$



- ☐ A. $A = 54^\circ 35'$; $B = 35^\circ 25'$; $c = 29.3 \text{ cm}$
☐ B. $A = 39^\circ 11'$; $B = 50^\circ 49'$; $c = 31.1 \text{ cm}$
☐ C. $A = 54^\circ 35'$; $B = 35^\circ 25'$; $c = 27.2 \text{ cm}$
☐ D. $A = 39^\circ 11'$; $B = 50^\circ 49'$; $c = 29.3 \text{ cm}$

3. On a sunny day, a flag pole and its shadow form the sides of a right triangle. If the hypotenuse is 35 meters long and the shadow is 28 meters, how tall is the flag pole?

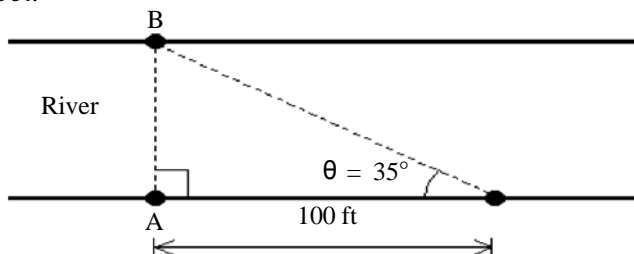
- ☐ A. 63 m
☐ B. 49 m
☐ C. 45 m
☐ D. 21 m

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4. A conservation officer needs to know the width of a river in order to set instruments correctly for a study of pollutants in the river. From point A, the conservation officer walks 100 feet downstream and sights point B on the opposite bank to determine that $\theta = 35^\circ$ (see figure). How wide is the river? Round to the nearest foot.



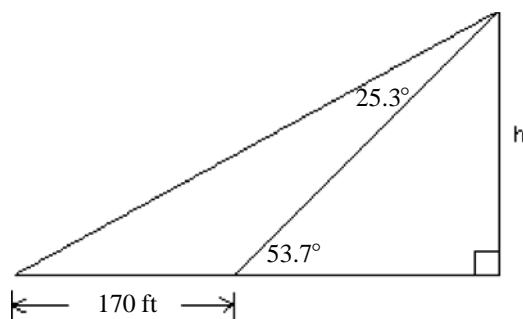
- ☐ A. 70 ft
- ☐ B. 57 ft
- ☐ C. 143 ft
- ☐ D. 122 ft
-
5. The length of the base of an isosceles triangle is 13.73 meters. Each base angle is 38.23° . Find the length of each of the two equal sides of the triangle. Round to two decimal places.
- ☐ A. 17.48 m
- ☐ B. 11.09 m
- ☐ C. 8.71 m
- ☐ D. 8.74 m

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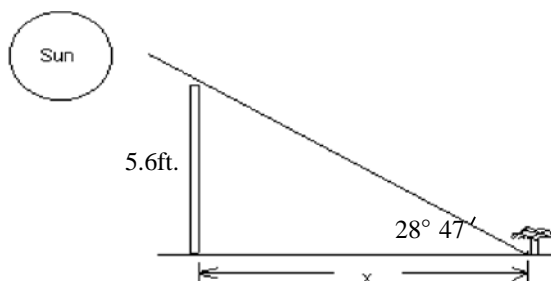
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6. Find h as indicated in the figure. Round your answer to the hundredths place.



- ☐ A. 128.22 ft
☐ B. 125.40 ft
☐ C. 119.65 ft
☐ D. 123.10 ft

7. In one area, the lowest angle of elevation of the sun in winter is $28^\circ 47'$. Find the minimum distance x that a plant needing full sun can be placed from a fence that is 5.6 feet high. Round your answer to the tenths place.



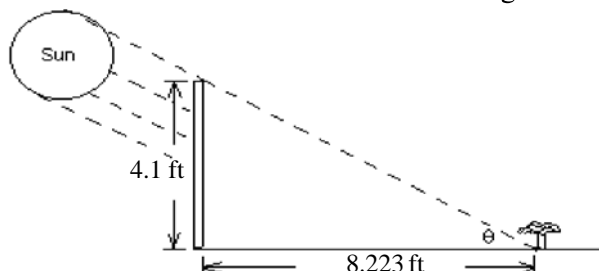
- ☐ A. 13.6 ft
☐ B. 10.4 ft
☐ C. 9.8 ft
☐ D. 10.2 ft

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8. A 4.1-ft fence is 8.223 ft away from a plant in the direction of the sun. It is observed that the shadow of the fence extends exactly to the bottom of the plant (see drawing). Find θ , the angle of elevation of the sun at that time. Round the measure of the angle to the nearest tenth of a degree.



- ☐ A. $\theta = 26.3^\circ$
☐ B. $\theta = 27.9^\circ$
☐ C. $\theta = 26.7^\circ$
☐ D. $\theta = 26.5^\circ$
9. Suppose ABC is a right triangle with sides of lengths a, b, and c and right angle at C. Find the unknown side length using the Pythagorean theorem and then find the value of the indicated trigonometric function of the given angle. Rationalize the denominator if applicable.

Find $\cos(A)$ when $a = 2$ and $b = 9$.

- ☐ A. $\frac{\sqrt{85}}{9}$
☐ B. $\frac{2\sqrt{85}}{85}$
☐ C. $\frac{\sqrt{85}}{2}$
☐ D. $\frac{9\sqrt{85}}{85}$