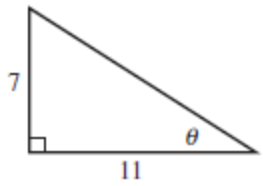
Pre-Calculus Name _____

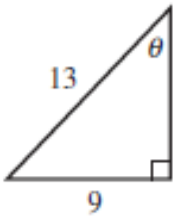
Right Triangle Trig Date _____ Per _____

1. Find values for all six trig functions of the angle θ.

a.



b.



2. Assume that θ is an acute angle in a right triangle satisfying the given conditions. Evaluate the remaining trigonometric functions.

a. $\sin\theta = \frac{6}{7}$

b. $\cot\theta = \frac{9}{4}$

c. $\sec\theta = \frac{25}{7}$

d. $\tan\theta = 5$

3. Evaluate using a calculator. Make sure your calculator is in the correct mode. Give answers to 3 decimal places and then draw the triangle that represents the situation

a. $\cos 240° =$

b. $\sin 125° =$

c. $\cot 340° =$

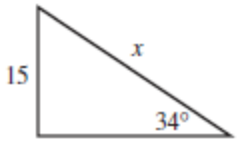
d. $\tan \frac{7\pi}{12} =$

e. $sec \frac{41\pi}{26}$

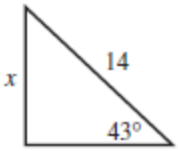
f. $csc \frac{4\pi}{9}$

4. Solve for the variable shown.

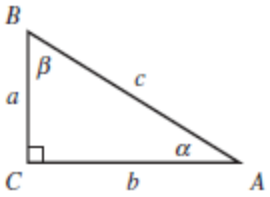
a.



b.



5. Solve the right triangle for all unknown parts.



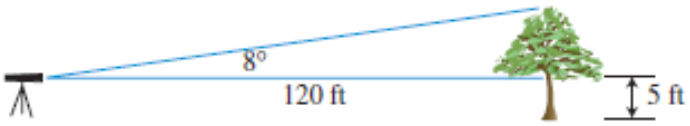
a. $\alpha = 20°; a = 12.3$

b. $\alpha = 41°; c = 10$

c. $\beta = 55°; a = 15.58$

d. $a = 5; \beta = 59°$

6. . **Height** Kirsten places her surveyor's telescope on the top of a tripod 5 feet above the ground. She measures an 8° elevation above the horizontal to the top of a tree that is 120 feet away. How tall is the tree?



7. Point P is on the terminal side of angle θ. Evaluate the six trigonometric functions for θ.

a. $(5, -2)$

b. $(-1, -3)$

c. $(-2, 0)$

d. $(-5, 12)$

8. Name the quadrant in which the angle θ lies.

a. $\sin\theta > 0, \quad \cos\theta < 0$

b. $\sin\theta < 0, \quad \tan\theta < 0$

c. $\csc\theta > 0, \quad \cot\theta < 0$

d. $\sec\theta < 0, \quad \tan\theta > 0$

9. Evaluate without a calculator.

a. Find $\sin\theta$ and $\tan\theta$ if $\cos\theta = \frac{2}{3}$ and $\cot\theta > 0$.

b. Find $\cos\theta$ and $\cot\theta$ if $\sin\theta = \frac{1}{4}$ and $\tan\theta < 0$.

c. Find $\tan\theta$ and $\sec\theta$ if $\sin\theta = -\frac{2}{5}$ and $\cos\theta > 0$.

d. Find $\sin\theta$ and $\cos\theta$ if $\cot\theta = \frac{3}{7}$ and $\sec\theta < 0$.

e. Find $\sec\theta$ and $\csc\theta$ if $\cot\theta = -\frac{4}{3}$ and $\cos\theta < 0$.

f. Find $\csc\theta$ and $\cot\theta$ if $\tan\theta = -\frac{4}{3}$ and $\sin\theta > 0$.