

Math 1613 - Trigonometry

Exam #1 - 2010.08.31

Name: _____

1. Find the supplementary angles with measures $6x - 4$ and $8x - 12$ degrees.

2. Find the complementary angles with measures $3x - 5$ and $6x - 40$ degrees.

3. Perform the following calculations.

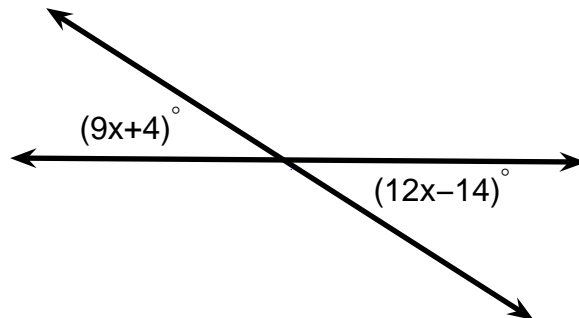
a) $62^{\circ}18' - 28^{\circ}57'$

b) $26^{\circ}20' + 15^{\circ}37'$

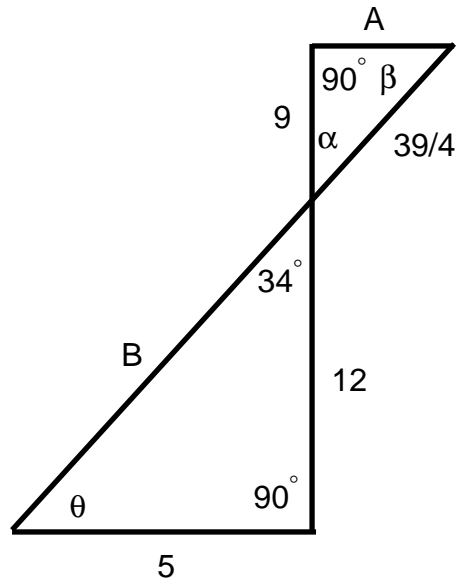
4. Find the angle of least positive measure (not equal to the given measure) coterminal with the angle of -67° .

5. A pulley rotates through 75° in 1 minute. How many rotations does the pulley make in an hour?

6. Find the measure of each marked angle.



7. Find the measure of the angles α , β , and θ . Find the lengths of sides A and B .



8. Evaluate each of the following trigonometric expressions.

a) $\cos(90^\circ) + 3 \sin(270^\circ)$

b) $3 \sec(180^\circ) - 5 \tan(360^\circ)$

9. Fill in the following table:

	$\sin(\theta)$	$\cos(\theta)$	$\tan(\theta)$	$\csc(\theta)$	$\sec(\theta)$	$\cot(\theta)$
0°						
30°						
45°						
60°						
90°						

10. If a building that is 40 ft. tall casts a shadow that is 8 ft. long, and the building across the road casts a 10ft. shadow at the same time, how much taller is this building?

11. Given $\sin(\theta) = \frac{\sqrt{3}}{5}$ with $\cos(\theta) < 0$, find the remaining five trigonometric values corresponding to the given information.

12. Determine whether each of the following statements are possible.

a) $\tan(\theta) = 0.24$

b) $\sin(\theta) = 2\pi$

c) $\csc(\theta) = 0.9$

13. Suppose that $90^\circ < \theta < 180^\circ$, what is the sign of $\sin(2\theta)$?

14. Find the value of θ such that $\sin(4\theta + 2^\circ) \csc(3\theta + 5^\circ) = 1$.