

NO CALCULATOR! The quiz will also be ENTIRELY without a calculator!

For #1-4, sketch the angle in standard position. Find one positive and one negative coterminal angle:

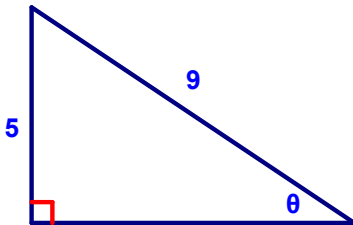
1) $\frac{-4\pi}{3}$

2) $\frac{-23\pi}{3}$

3) 70°

4) 280°

5) Find the exact values of the six trig functions of the angle θ shown in the figure:



$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

$\cot \theta =$

$\sec \theta =$

$\csc \theta =$

6) Use the given function value and trig identity to find the indicated trig functions:
 $\csc \theta = 4$ in Quadrant I

a) $\sin \theta =$

b) $\cos \theta =$

c) $\sec \theta =$

d) $\tan \theta =$

- 7) Find the EXACT values of the six trig functions of the angle θ (in standard position) whose terminal side passes through the point (3,-4)

$$\sin \theta = \quad \quad \quad \cos \theta =$$

$$\tan \theta = \quad \quad \quad \cot \theta =$$

$$\sec \theta = \quad \quad \quad \csc \theta =$$

- 8) Complete the following chart. Write *undefined* where appropriate- it IS a possible answer! It might help to think about the unit circle.

θ	$\sin \theta$	$\cos \theta$	$\tan \theta$	$\csc \theta$	$\sec \theta$	$\cot \theta$
0°						
90°						
180°						
270°						

- 9) Find the five remaining trig functions of θ satisfying the condition:

$$\sin \theta = \frac{-2}{7}, \cos \theta > 0$$

$$\cot \theta = \quad \quad \quad \cos \theta =$$

$$\tan \theta = \quad \quad \quad \csc \theta =$$

$$\sec \theta =$$

10) State which quadrant the terminal side of θ is in:

	Quadrant		
$\sec\theta = \frac{6}{5}, \tan\theta < 0$		$\tan\theta = \frac{5}{4}, \cos\theta < 0$	
$\csc\theta = \frac{3}{2}, \cos\theta < 0$		$\cos\theta = -\frac{2}{5}, \sin\theta > 0$	
$\sin\theta = \frac{3}{8}, \cos\theta < 0$		$\cos\theta < 0, \sin\theta < 0$	
$\csc\theta < 0, \sec\theta > 0$		$\cot\theta = \frac{3}{2}, \cos\theta > 0$	

11) Evaluate the following **without a calculator!** - it may help to draw a picture

a) $\sin 495^\circ$

b) $\cos (-150)^\circ$

c) $\tan\left(-\frac{4\pi}{3}\right)$

d) $\csc\left(\frac{7\pi}{4}\right)$

12) Find all values of θ in the interval $0^\circ < \theta < 360^\circ$

a) $\csc \theta = \frac{2\sqrt{3}}{3}$ and $\sec \theta > 0$

b) $\tan \theta = -1$ and $\sin \theta > 0$

c) $\cos \theta = -\frac{\sqrt{2}}{2}$ and θ is in Quadrant III

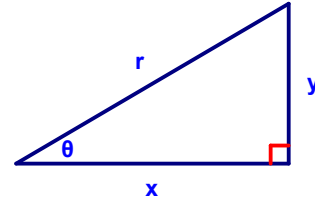
d) $\cot \theta = \sqrt{3}$ and $\sin \theta < 0$

13) SHOW WHY the following statements are true. This means start with the left side and transform it to look like the right side.

a) $\frac{\sin \theta}{\cos \theta} = \tan \theta$

b)

You may use the labeled triangle is it helps in your analysis:



c) $\frac{\cos \theta}{\sin \theta} = \cot \theta$

d) $\sin^2 \theta + \cos^2 \theta = 1$

e) Using part (c), show this is true: $\tan^2 \theta + 1 = \sec^2 \theta$

f) Using part (c), show this is true: $1 + \cot^2 \theta = \csc^2 \theta$