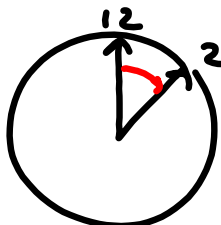
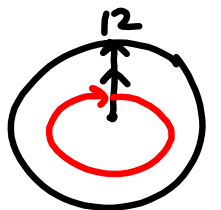


Homework 7-3



$$\frac{2}{12} : \frac{x}{360}$$

1. $\pi/10$

2. -3π

3. $7\pi/18$

4. 420°

5. -540°

6. 105°

7. 1.71 rad

8. -3.46 rad

9. 4.71 rad

10. 83.1°

11. 435.4°

12. -206.3°

13-15 see next slide

16. minute hand: 360° , 2π

hour hand: 60° , $\pi/3$

17. π

18. $0, \pi$

19. $0, \pi$

20. $\pi/2, 3\pi/2$

Aug 13-1:33 PM

Name: Key
Period:

Algebra 2 Homework 7-3

State each angle in radians in terms of π .

1. $18^\circ \left(\frac{\pi}{180} \right) = \frac{\pi}{10}$

2. $-540^\circ \left(\frac{\pi}{180} \right) = -3\pi$

3. $70^\circ \left(\frac{\pi}{180} \right) = \frac{7\pi}{18}$

Convert the radian measures to degrees, rounded to the nearest degree.

4. $\frac{7\pi}{3} \left(\frac{180}{\pi} \right) = 420^\circ$

5. $-3\pi \left(\frac{180}{\pi} \right) = -540^\circ$

6. $\frac{7\pi}{12} \left(\frac{180}{\pi} \right) = 105^\circ$

State each angle to the nearest hundredth of a radian. Do not leave your answer in terms of π .

7. $98^\circ \left(\frac{\pi}{180} \right) = 1.71 \text{ rad}$

8. $-198^\circ \left(\frac{\pi}{180} \right) = -3.46 \text{ rad}$

9. $270^\circ \left(\frac{\pi}{180} \right) = 4.71 \text{ rad}$

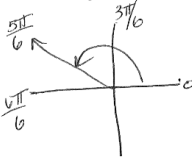
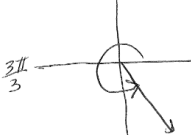
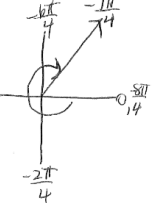
Convert the radian measures to the nearest tenth of a degree.

10. $1.45 \left(\frac{180}{\pi} \right) = 83.1^\circ$

11. $7.6 \left(\frac{180}{\pi} \right) = 435.4^\circ$

12. $-3.6 \left(\frac{180}{\pi} \right) = -206.3^\circ$

Sketch the following angles:

13. $\frac{5\pi}{6}$  14. $\frac{5\pi}{3}$  15. $-\frac{7\pi}{4}$ 

16. A clock starts at midnight. It is now 2 AM. What angle has the minute hand swept through in one hour? What angle has the hour hand swept through in two hours? State both answers in degrees and radians. Hint: Pay special attention to the direction of rotation.

Minute hand = 360° = 2π rad

Hour hand: $\frac{2}{12} = \frac{x}{360}$ $x = 60^\circ$ $\frac{2}{12} = \frac{x}{2\pi}$ $x = \frac{\pi}{3} \text{ rad}$

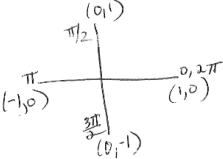
Using the unit circle, find all of the measure of angle θ . $0 \leq \theta < 2\pi$

17. $\cos(\theta) = -1$ (means what angle has a cosine = -1?) *π*

18. $\sin(\theta) = 0$ *$0, \pi$*

19. $\tan(\theta) = 0$ *$0, \pi$*

20. $\tan(\theta) = \text{undefined}$ *$\frac{\pi}{2}, \frac{3\pi}{2}$*



Day 4: Reference Angles and ASTC

Warm-Up:

- a. Convert the angle to radians or degrees.
- b. Sketch the angle in standard position, and determine the quadrant in which the angle lies.
- c. Find the measures of a positive and negative angle that are coterminal with the given angle.

1. 50°

2. $\frac{-4\pi}{3}$

Aug 9-4:42 PM

Dec 19-1:11 PM

" All star trig class "

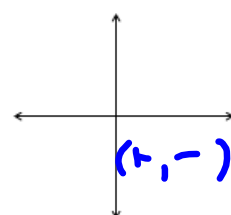
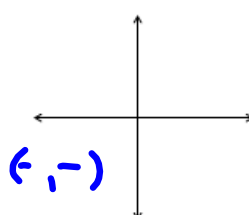
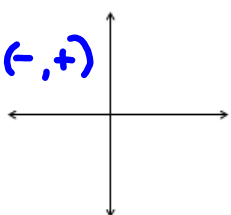
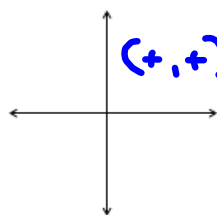
Sine, Cosine and Tangent in Quadrants:

Quad I

Quad II

Quad III

Quad IV



$\sin(\theta)$	+
$\cos(\theta)$	+
$\tan(\theta)$	+

$\sin(\theta)$	+
$\cos(\theta)$	-
$\tan(\theta)$	-

$\sin(\theta)$	-
$\cos(\theta)$	-
$\tan(\theta)$	+

$\sin(\theta)$	-
$\cos(\theta)$	+
$\tan(\theta)$	-

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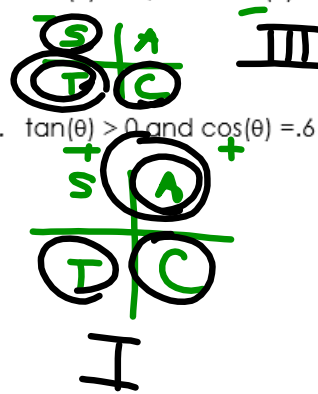
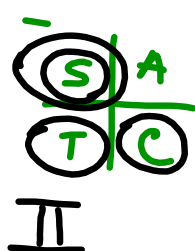
Determine the quadrant in which angle θ may lie if:

a. $\tan(\theta) < 0$ and $\sin(\theta) = \frac{3}{5}$

c. $\tan(\theta) < 0$ and $\cos(\theta) < 0$

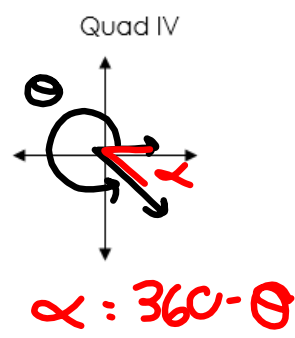
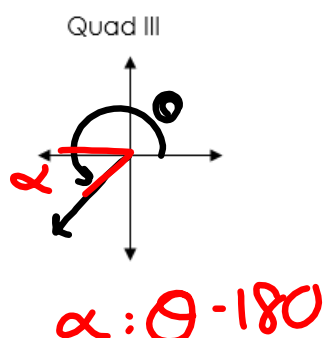
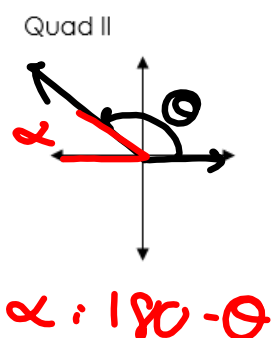
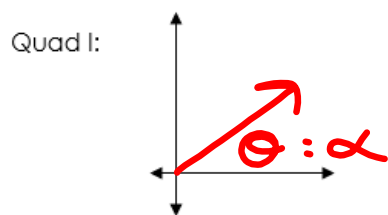
b. $\cos(\theta) = -1/2$ and $\sin(\theta) < 0$

d. $\tan(\theta) > 0$ and $\cos(\theta) = .6$



Aug 13-11:47 AM

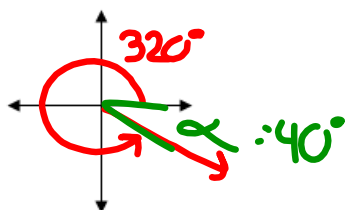
Definition: A **reference angle** is a positive acute angle formed by the terminal side and the x-axis. It is often denoted by the symbol alpha.
Note: Quadrants do not have reference angles.



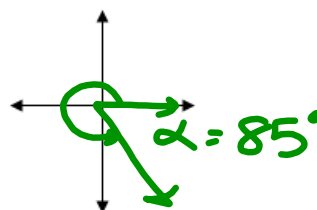
Aug 9-4:45 PM

Sketch and find the reference angle:

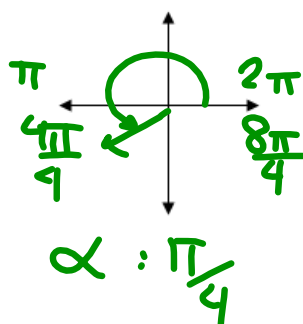
1. 320°



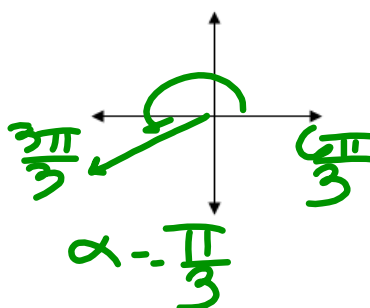
2. 275°



3. $\frac{5\pi}{4}$

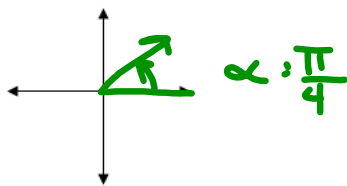


4. $\frac{4\pi}{3}$

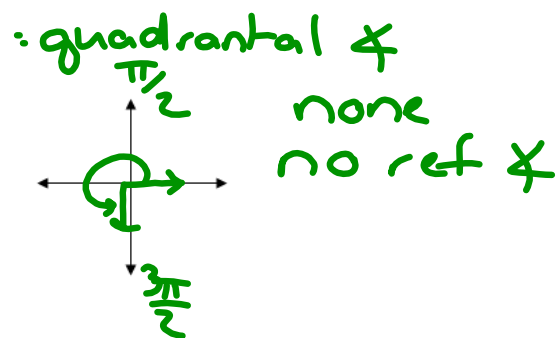


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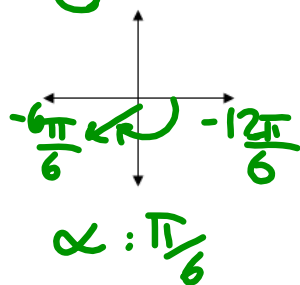
5. $\frac{\pi}{4}$



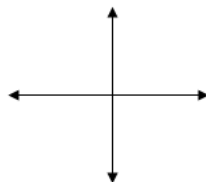
6. $\frac{3\pi}{2}$



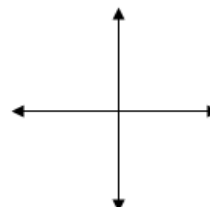
7. $\frac{-5\pi}{6}$



8. $\frac{-2\pi}{3}$



9. $-\frac{9\pi}{5}$



Aug 9-4:46 PM

Dec 19-9:27 AM