1.5-1.7 Work Day

Warm-Up Wednesday

1. Convert the following degrees to radians:

a. $\cancel{30^\circ} \cdot \frac{\pi}{\cancel{180}\,6}$ $\boxed{\frac{\pi}{6}}$

b. $60^\circ \cdot \frac{\pi}{180}$ $\boxed{\frac{\pi}{3}}$

2. Convert the following radians to degrees:

a. $\frac{\cancel{\pi}}{\cancel{4}} \cdot \frac{\cancel{180}\,45}{\cancel{\pi}}$ $\boxed{45^\circ}$

b. $\frac{\pi}{2}$ $\boxed{90^\circ}$

About Me

1. What's your favorite type of music?

2. What was the first CD/mp3/etc. you ever bought? (not illegally downloaded, actually purchased with money...)

1.7 REFERENCE ANGLES

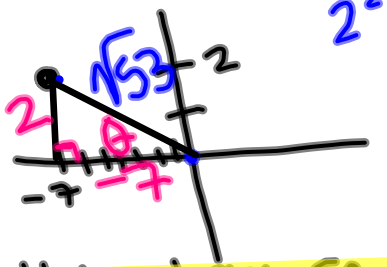
EQ: How do I find a reference angle of an angle in any quadrant?

HOW FAR AWAY FROM THE X-AXIS IS YOUR ANGLE??

Find the exact values of the six trig functions of an angle θ whose terminal side passes through the given point.

fraction angle ends

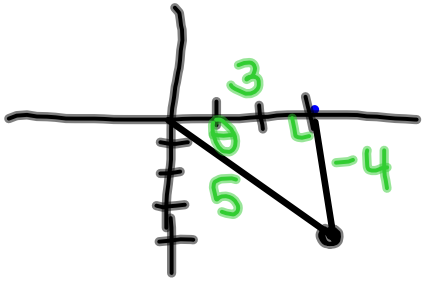
5. $(-7,2)$ (#13) (3,-4)



$2^2+(-7)^2=c^2$

$4+49=c^2$

$53=c^2$



Hypotenuse is NEVER negative!

SOH CAH TOA

$\sin\theta = 2/\sqrt{53}$ $\csc\theta = \sqrt{53}/2$

$\cos\theta = -7/\sqrt{53}$ $\sec\theta = \sqrt{53}/-7$

$\tan\theta = \frac{2}{-7}$ $\cot\theta = -7/2$

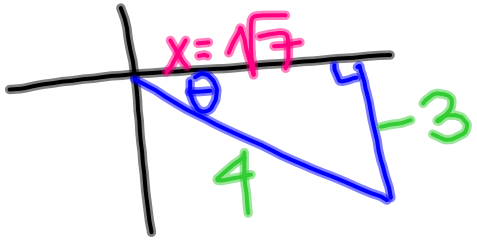
1.7 REFERENCE ANGLES

EQ: How do I find a reference angle of an angle in any quadrant?

HOW FAR AWAY FROM THE X-AXIS IS YOUR ANGLE??

Find the exact value of the other five trig functions of θ if θ terminates in the given quadrant and has the given function value.

7. QIV, $\sin\theta = -\frac{3}{4}$ opp hyp II I III IV



$x^2 + (-3)^2 = 4^2$

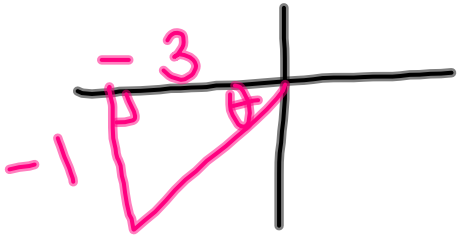
$x^2 + 9 = 16$

$x^2 = 7$

$\cos\theta = \frac{\sqrt{7}}{4}$ $\sec\theta = 4/\sqrt{7}$ $\csc\theta = -\frac{4}{3}$

$\tan\theta = -3/\sqrt{7}$ $\cot\theta = \sqrt{7}/-3$

18. QIII, $\tan\theta = \frac{1}{3}$



Find the exact values of the six trig functions of an angle θ whose terminal side passes through the given point.

13. $(3,-4)$

14. $(-7,-5)$

15. $(-5,12)$

16. $(2,3)$

Find the exact value of the other five trig functions of θ if θ terminates in the given quadrant and has the given function value.

17. QII, $\sec\theta = -\frac{5}{4}$

18. QIII, $\tan\theta = \frac{1}{3}$

1.5-1.7 Work Day

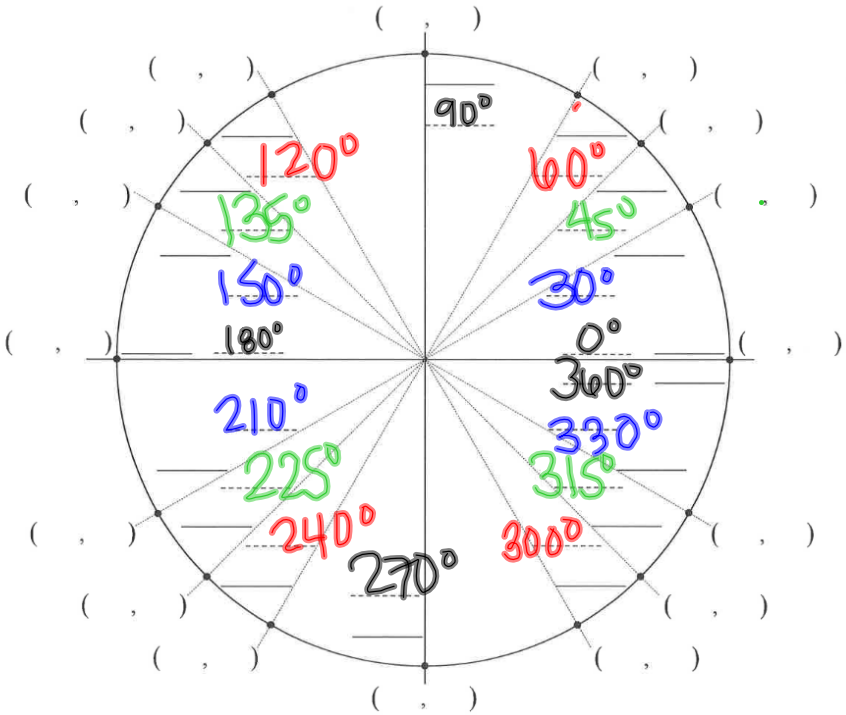
Goal(s) today:

- Earn all 4 HW (1.4, 1.5, 1.6, & 1.7) stamps - turn in your gold HW calendar before you leave.
- Catch up on missing notes - you can use YOUR notes on tomorrow's quiz. Notes need to be in a notebook or binder - not loose papers or homeworks!!!
- Get help with whatever you don't understand!

The Unit Circle

Practice filling in this unit circle until you can complete it in 5 minutes.

Place the **degree** angle measure of each angle in the **dashed** blanks inside the circle, and the **radian** measure of each angle in the **solid** blanks inside the circle. Place the coordinates of each point in the ordered pairs outside the circle.



1.7 .Reference Angles ODDS ☺ **Name:**_____

Identify in which quadrant (or on which axis) each angle lies and then find the reference angle. Draw the reference angle in the appropriate quadrant for numbers (1-4). If the problem is given in degrees, leave your answer in degrees. If the problem is given in radians, leave your answer in radians.

1. 125°

2. $\frac{13\pi}{9}$

3. $-\frac{2\pi}{5}$

4. 400°

5. -110°

6. $\frac{20\pi}{9}$

7. 22°

8. $\frac{7\pi}{8}$

9. -385°

10. $-\frac{41\pi}{15}$

11. $\frac{29\pi}{8}$

12. 245°