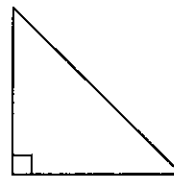
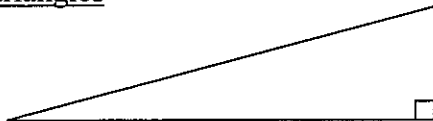


Warm-up: before Review for Test #2

Name: Answer Key
 Period:

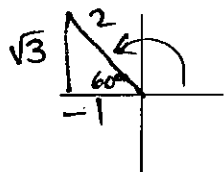
SHOW YOUR WORK as demonstrated in class notes

Label the special triangles

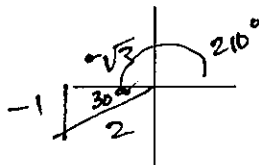


Evaluate each trigonometric function by drawing the reference triangle.

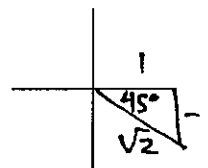
1. $\cos(120^\circ) = -\frac{1}{2}$



2. $\tan(210^\circ) = \frac{-1}{-\sqrt{3}} = \frac{\sqrt{3}}{3}$

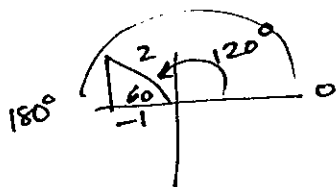


3. $\sin(-45^\circ) = -\frac{1}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$



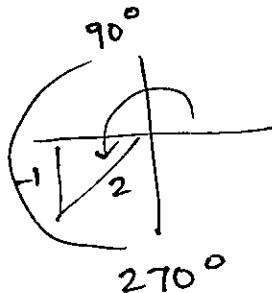
4. If $0^\circ \leq \theta \leq 180^\circ$ and $\cos \theta = -\frac{1}{2}$, then $\theta = ?$

- A. 30°
- B. 60°
- C. 120°
- D. 150°



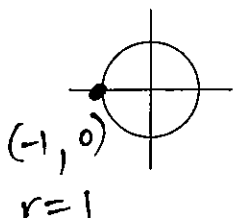
5. If $90^\circ \leq \theta \leq 270^\circ$ and $\sin \theta = -\frac{1}{2}$, then $\theta = ?$

- A. 30°
- B. 120°
- C. 210°
- D. 240°

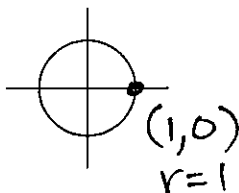


Evaluate each trigonometric function by labeling the correct point on the unit circle.

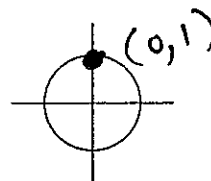
6. $\cos(180^\circ) = \frac{-1}{1} = -1$



7. $\sec(360^\circ) = \frac{1}{1} = 1$



8. $\tan(90^\circ) = \frac{1}{0} = \text{undef.}$



turn the page over for the last problem

Name: Key
 Period: _____

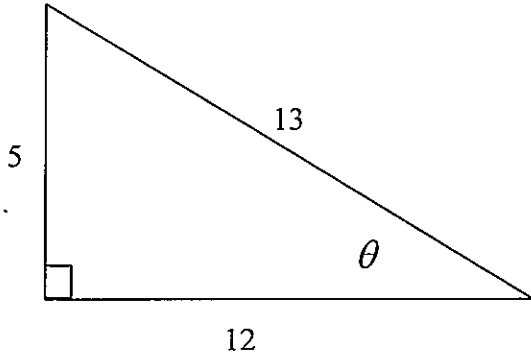
Test Next Time!

Algebra 2

Review for Test #2

A day (Dec 13) B day (Dec 14)

1. Write all 6 trigonometric ratios given the following triangle:

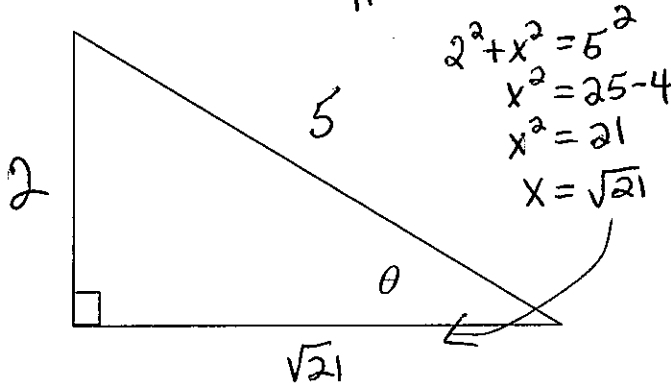


$$\sin(\theta) = \frac{5}{13} \quad \csc(\theta) = \frac{13}{5}$$

$$\cos(\theta) = \frac{12}{13} \quad \sec(\theta) = \frac{13}{12}$$

$$\tan(\theta) = \frac{5}{12} \quad \cot(\theta) = \frac{12}{5}$$

2. In a right triangle, $\csc \theta = \frac{5}{2}$ hyp opp Find the remaining five trigonometric ratios.



$$\sin(\theta) = \frac{2}{5} \quad \csc(\theta) = \frac{5}{2}$$

$$\cos(\theta) = \frac{\sqrt{21}}{5} \quad \sec(\theta) = \frac{5}{\sqrt{21}} = \frac{5\sqrt{21}}{21}$$

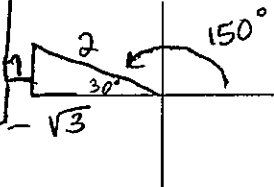
$$\tan(\theta) = \frac{2}{\sqrt{21}} = \frac{2\sqrt{21}}{21} \quad \cot(\theta) = \frac{\sqrt{21}}{2}$$

3. Find the following trigonometric ratios for the given angles. Do not use a calculator!

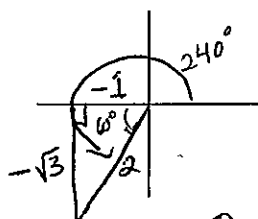
You may find drawing a reference triangle helpful.

$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{y}{r}$
 $\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{x}{r}$
 $\tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{y}{x}$

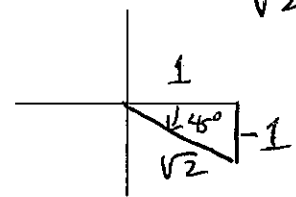
a) $\cos(150^\circ) = -\frac{\sqrt{3}}{2}$



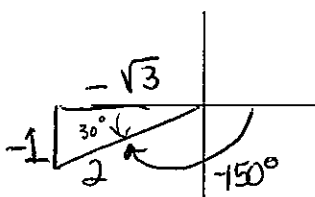
b) $\tan(240^\circ) = \frac{-\sqrt{3}}{-1} = \sqrt{3}$



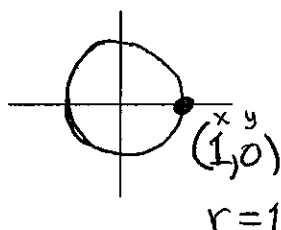
c) $\sin(-45^\circ) = \frac{-1}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$



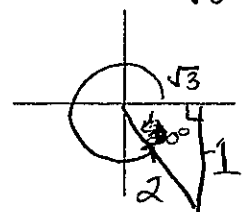
d) $\cos(-150^\circ) = -\frac{\sqrt{3}}{2}$



e) $\sin(0^\circ) = \frac{0}{1} = 0$



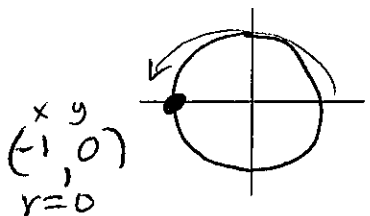
f) $\tan(330^\circ) = \frac{-1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$



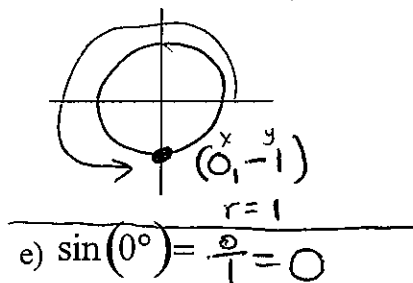
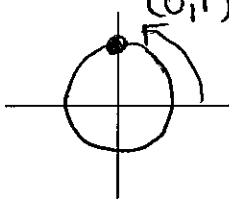
4. Find the following trigonometric ratios for the given angles. Do not use a calculator!

You may find drawing a *reference triangle* helpful.

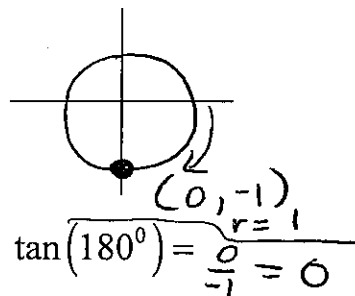
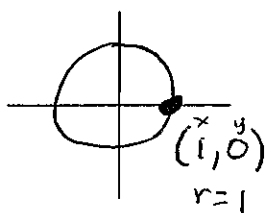
a) $\cos(180^\circ) = -\frac{1}{1} = -1$ b) $\tan(270^\circ) = \frac{-1}{0} = \text{undef.}$ c) $\sin(-90^\circ) = -\frac{1}{1} = -1$



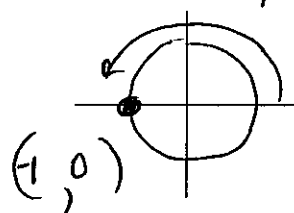
d) $\cos(90^\circ) = \frac{0}{1} = 0$
 (0, 1) $r=1$



e) $\sin(0^\circ) = \frac{0}{1} = 0$

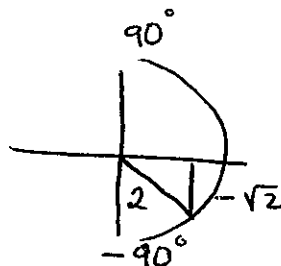


f) $\tan(180^\circ) = \frac{0}{1} = 0$



5. If $-90^\circ \leq \theta \leq 90^\circ$ and $\sin \theta = -\frac{\sqrt{2}}{2}$, then $\theta = ?$

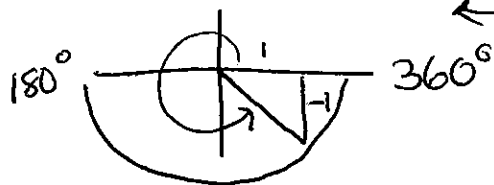
- A. 45°
- B. 135°
- C. -45°
- D. -30°



$-90^\circ \leq \theta \leq 90^\circ$
 means between 4th and 1st
 Quadrants

6. If $\tan \theta = -1$, for $180^\circ \leq \theta \leq 360^\circ$ find the exact value for θ .

- A. 315°
- B. 225°
- C. 135°
- D. 330°



$180^\circ \leq \theta \leq 360^\circ$
 between 3rd & 4th Quadrant

7. If $\sin \theta > 0$ and $\tan \theta < 0$, then

- A. $0^\circ < \theta < 90^\circ$
- B. $90^\circ < \theta < 180^\circ$
- C. $180^\circ < \theta < 270^\circ$
- D. $270^\circ < \theta < 360^\circ$

2nd Quadrant

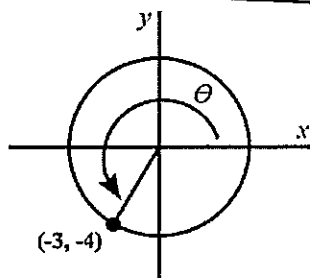
$\sin \theta > 0$ means $\frac{y}{r}$ is positive
 y is positive in the 1st & 2nd Quad

$\tan \theta < 0$ means $\frac{y}{x}$ is negative

y and x are opposite signs in the
 2nd and 4th Quadrants

8. Find $\tan \theta$, given the point on the circle pictured.

- A. $-\frac{4}{3}$
- C. $\frac{4}{3}$
- B. $-\frac{3}{4}$
- D. $\frac{3}{4}$



$\tan \theta = \frac{y}{x} = \frac{-4}{-3} = \frac{4}{3}$

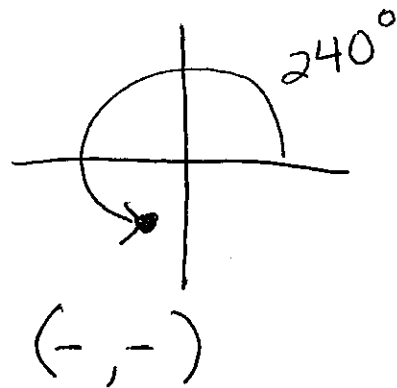
9. Which point on the (x, y) on the unit circle corresponds to the real number $\theta = 240^\circ$.

A. ~~$\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$~~

C. ~~$\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$~~

B. ~~$\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$~~

D. $\left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$



only answer with both negative values for x and y

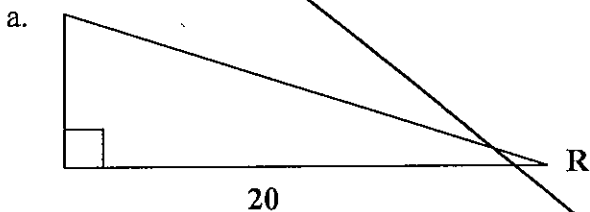
ignore this

Challenge Problems: This problems are not required to have the assignment completed

10.

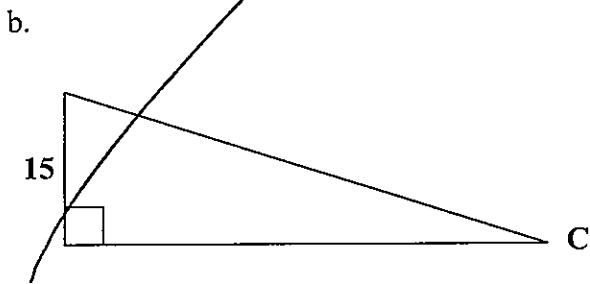
Remember, Pythagorean Theorem is great, but it only works if you know TWO of the sides!

With trig, if we know an angle and ONE side, we can find the other bits of information!!



If $m\angle R = 30^\circ$, find the height of the triangle.

Hint: which trig ratio will you need?



If $m\angle C = 30^\circ$, find the hypotenuse of the triangle.

Hint: which trig ratio will you need?