

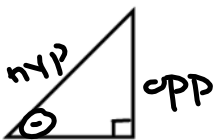
Notes Organizer

Unit 2 - Triangle Trigonometry

SOH (A) TA<sup>o</sup> Fall 2012

Write out the Trig Ratios

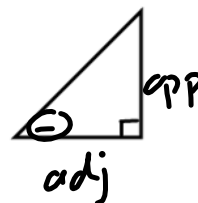
$\sin \theta = \frac{\text{opp}}{\text{hyp}}$



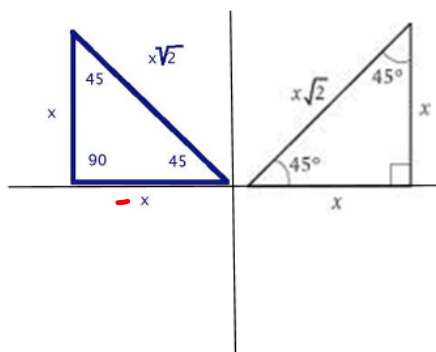
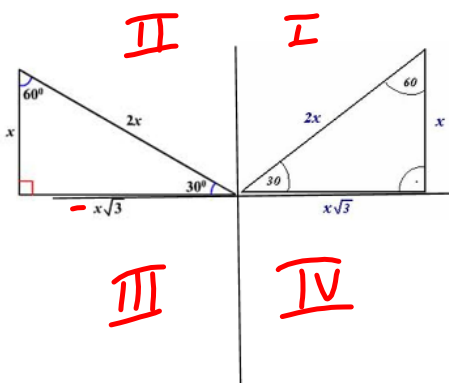
$\cos \theta = \frac{\text{adj}}{\text{hyp}}$



$\tan \theta = \frac{\text{opp}}{\text{adj}}$

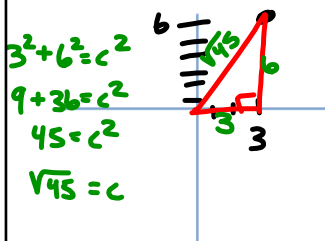


Special Right Triangle



Making Triangles on a Coordinate Plane

Triangle at (3,6)



$3^2 + 6^2 = c^2$   
 $9 + 36 = c^2$   
 $45 = c^2$   
 $\sqrt{45} = c$

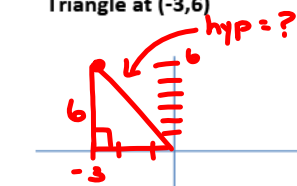
Hypotenuse =  $\sqrt{45}$

$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{6}{\sqrt{45}}$

$\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{3}{\sqrt{45}}$

$\tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{6}{3} = 2$

Triangle at (-3,6)



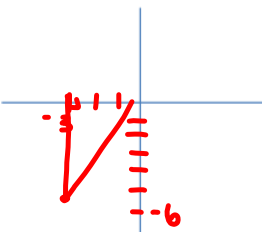
$(-3)^2 + 6^2 = c^2$   
 $9 + 36 = c^2$   
 $\sqrt{45} = c$

$\sin \theta = \frac{6}{\sqrt{45}}$

$\cos \theta = \frac{-3}{\sqrt{45}}$

$\tan \theta = \frac{6}{-3} = -2$

Triangle at (-3,-6)



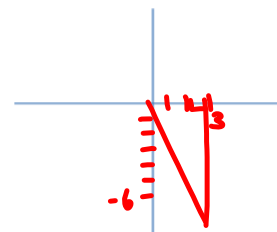
Hypotenuse =  $\sqrt{45}$

$\sin \theta = \frac{-6}{\sqrt{45}}$

$\cos \theta = \frac{-3}{\sqrt{45}}$

$\tan \theta = \frac{-6}{-3} = 2$

Triangle at (3,-6)



Hypotenuse =  $\sqrt{45}$

$\sin \theta = \frac{-6}{\sqrt{45}}$

$\cos \theta = \frac{3}{\sqrt{45}}$

$\tan \theta = \frac{-6}{3} = -2$

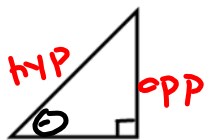
Notes Organizer

Unit 2 - Triangle Trigonometry

Fall 2012

Write out the Trig Ratios

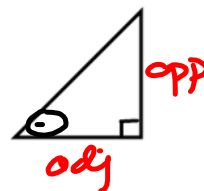
$$\sin \theta = \frac{O}{H}$$



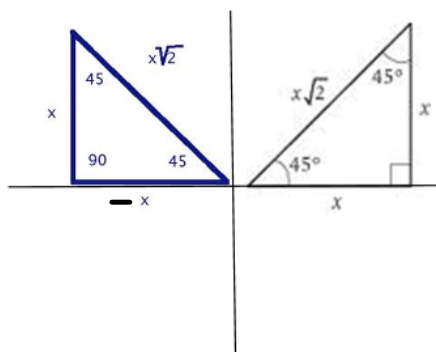
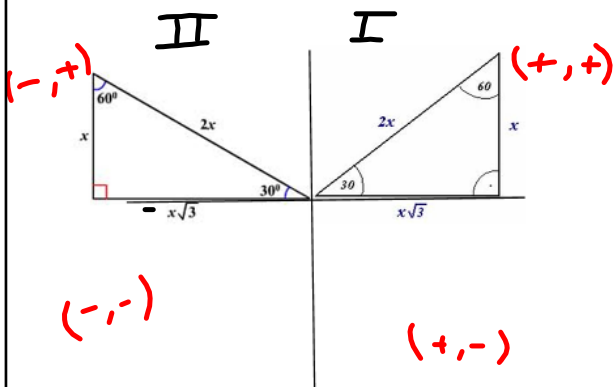
$$\cos \theta = \frac{A}{H}$$



$$\tan \theta = \frac{O}{A}$$



Special Right Triangle



Making Triangles on a Coordinate Plane

$$a^2 + b^2 = c^2$$

Triangle at (3,6)



$$3^2 + 6^2 = c^2$$

$$9 + 36 = c^2$$

$$45 = c^2$$

$$\sqrt{45} = c$$

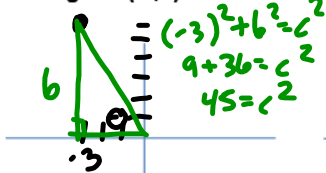
Hypotenuse =  $\sqrt{45}$

$$\sin \theta = \frac{opp}{hyp} = \frac{6}{\sqrt{45}}$$

$$\cos \theta = \frac{adj}{hyp} = \frac{3}{\sqrt{45}}$$

$$\tan \theta = \frac{opp}{adj} = \frac{6}{3}$$

Triangle at (-3,6)



$$(-3)^2 + 6^2 = c^2$$

$$9 + 36 = c^2$$

$$45 = c^2$$

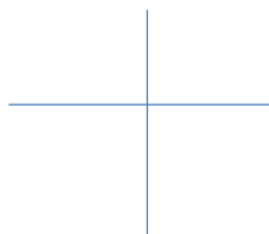
Hypotenuse =  $\sqrt{45}$

$$\sin \theta = \frac{6}{\sqrt{45}}$$

$$\cos \theta = \frac{-3}{\sqrt{45}}$$

$$\tan \theta = \frac{6}{-3}$$

Triangle at (-3,-6)



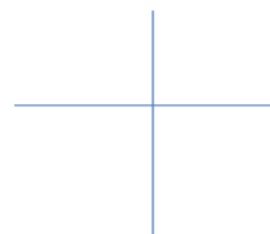
Hypotenuse = \_\_\_\_\_

Sin  $\theta$  = \_\_\_\_\_

cos  $\theta$  = \_\_\_\_\_

tan  $\theta$  = \_\_\_\_\_

Triangle at (3,-6)



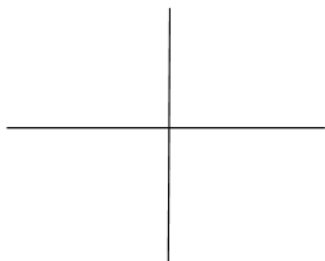
Hypotenuse = \_\_\_\_\_

Sin  $\theta$  = \_\_\_\_\_

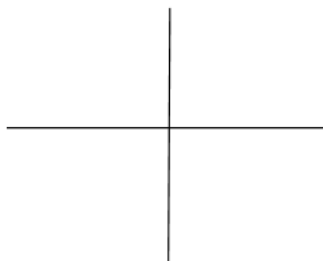
cos  $\theta$  = \_\_\_\_\_

tan  $\theta$  = \_\_\_\_\_

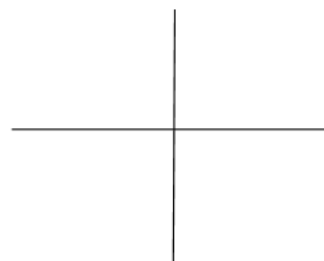
Sketch a  $60^\circ$  right triangle in Quad. I



Sketch a  $60^\circ$  right triangle from the x-axis in Quad. II



Sketch a  $60^\circ$  right triangle from the x-axis in Quad. III



What is the total degree of this angle between  $0^\circ$  and  $360^\circ$ ? \_\_\_\_\_

What is the total degree of this angle between  $0^\circ$  and  $360^\circ$ ? \_\_\_\_\_

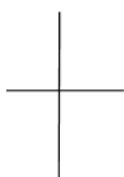
What is the total degree of this angle between  $0^\circ$  and  $360^\circ$ ? \_\_\_\_\_

Which angle above is the reference angle? \_\_\_\_\_ Why? \_\_\_\_\_

Which angle above is the co-terminal angle? \_\_\_\_\_ Why? \_\_\_\_\_

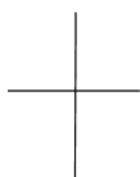
Draw the angle following angle measures on a coordinate plane.

$250^\circ$



Quad \_\_

$-70^\circ$



Quad \_\_

$410^\circ$



Quad \_\_

$-310^\circ$



Quad \_\_

$-540^\circ$



Quad \_\_

$-220^\circ$



Quad \_\_

Plot the following points, make a line from the origin to the point, make a right triangle, and then find all side lengths and angle measure.

(3, 4)

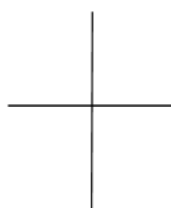


Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

(-2, 7)

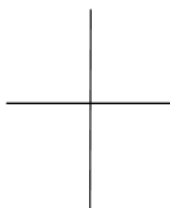


Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

(5, 1)



Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

(-3, -2)



Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

(8, -5)

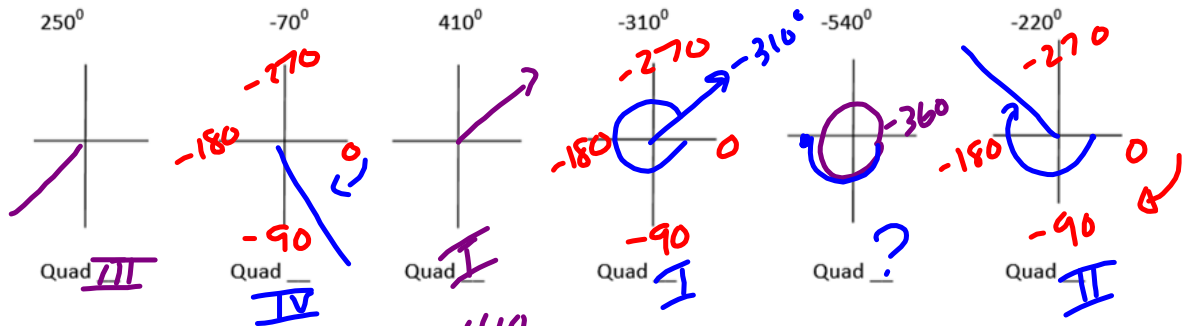


Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

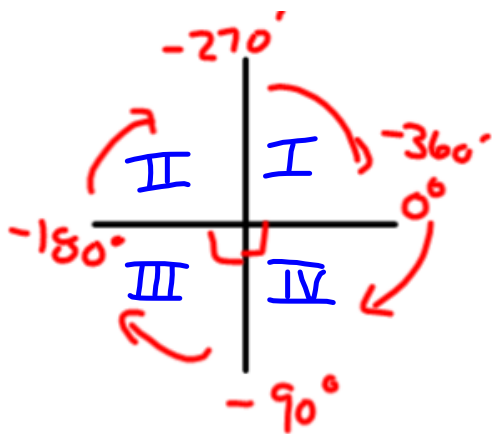
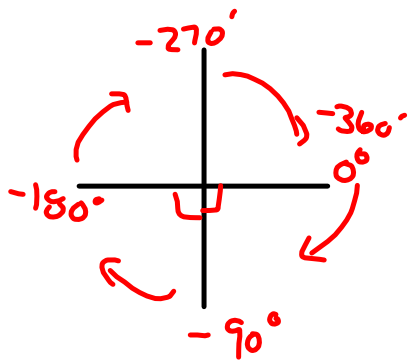
Draw the angle following angle measures on a coordinate plane.



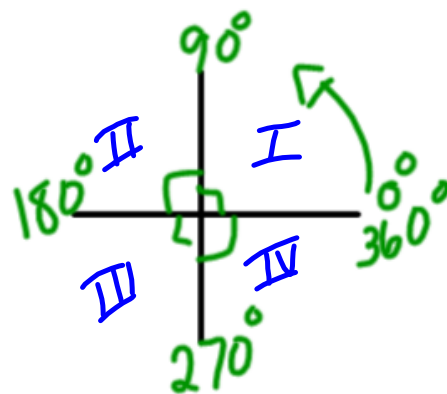
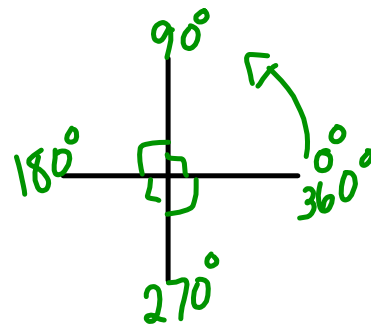
Notes:

$$\begin{array}{r} 410 \\ -360 \\ \hline 50 \end{array}$$

Negative Degrees:



Positive Degrees:



Draw the angle following angle measures on a coordinate plane.

$250^\circ$        $-70^\circ$        $410^\circ$        $-310^\circ$        $-540^\circ$        $-220^\circ$

Quad \_\_      Quad \_\_      Quad \_\_      Quad I      Quad \_\_      Quad II

$90^\circ$   
 $150^\circ$   
 $180^\circ$   
 $270^\circ$   
 $360^\circ$

$-270^\circ$   
 $-180^\circ$   
 $-150^\circ$   
 $-90^\circ$   
 $-360^\circ$

180°

360°

360  
+ 180  
540°

1080  
- 360  
720  
- 360  
360

1680

What is the Pythagorean Theorem? \_\_\_\_\_ When can you use this? \_\_\_\_\_

How do you find the sides of a right triangle? 1. \_\_\_\_\_ 2. \_\_\_\_\_

How do you find the angle measures of a right triangle? \_\_\_\_\_

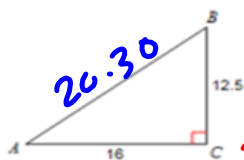
What does this stand for?

**SOHCAHTOA**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

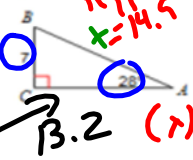
Solve each triangle. Round answers to the nearest tenth.

1)



$a^2 + b^2 = c^2$   
 $7^2 + x^2 = 14.9^2$

2)



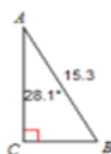
hyp  $x = 14.9$   
**SOHCAHTOA**

$\sin 28^\circ = \frac{7}{x} (x)$

$x \frac{\sin 28^\circ}{\sin 28^\circ} = \frac{7}{\sin 28^\circ}$

$x = \frac{7}{\sin 28^\circ} = 14.9$

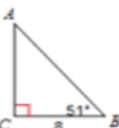
3)



4)



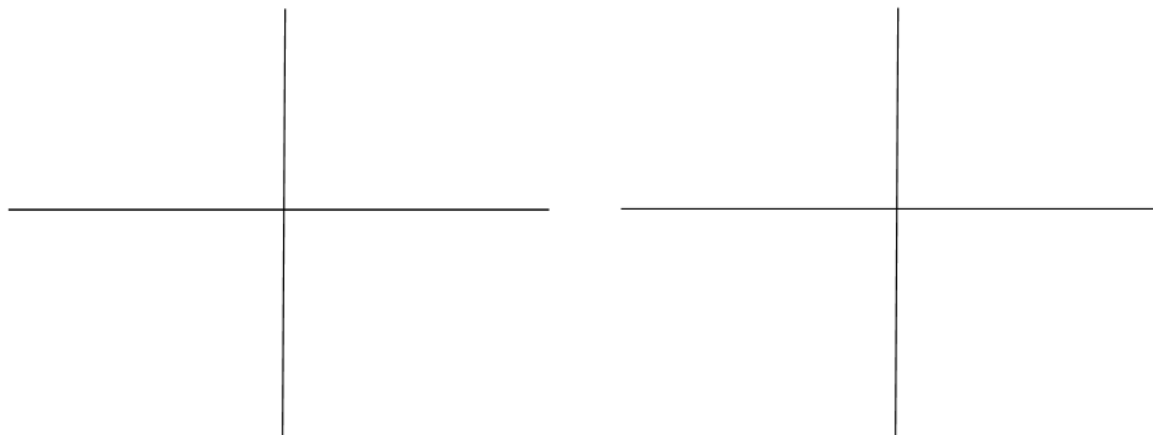
5)



6)



Make  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$  triangles around the coordinate plane using all quadrants (Quad I – IV).

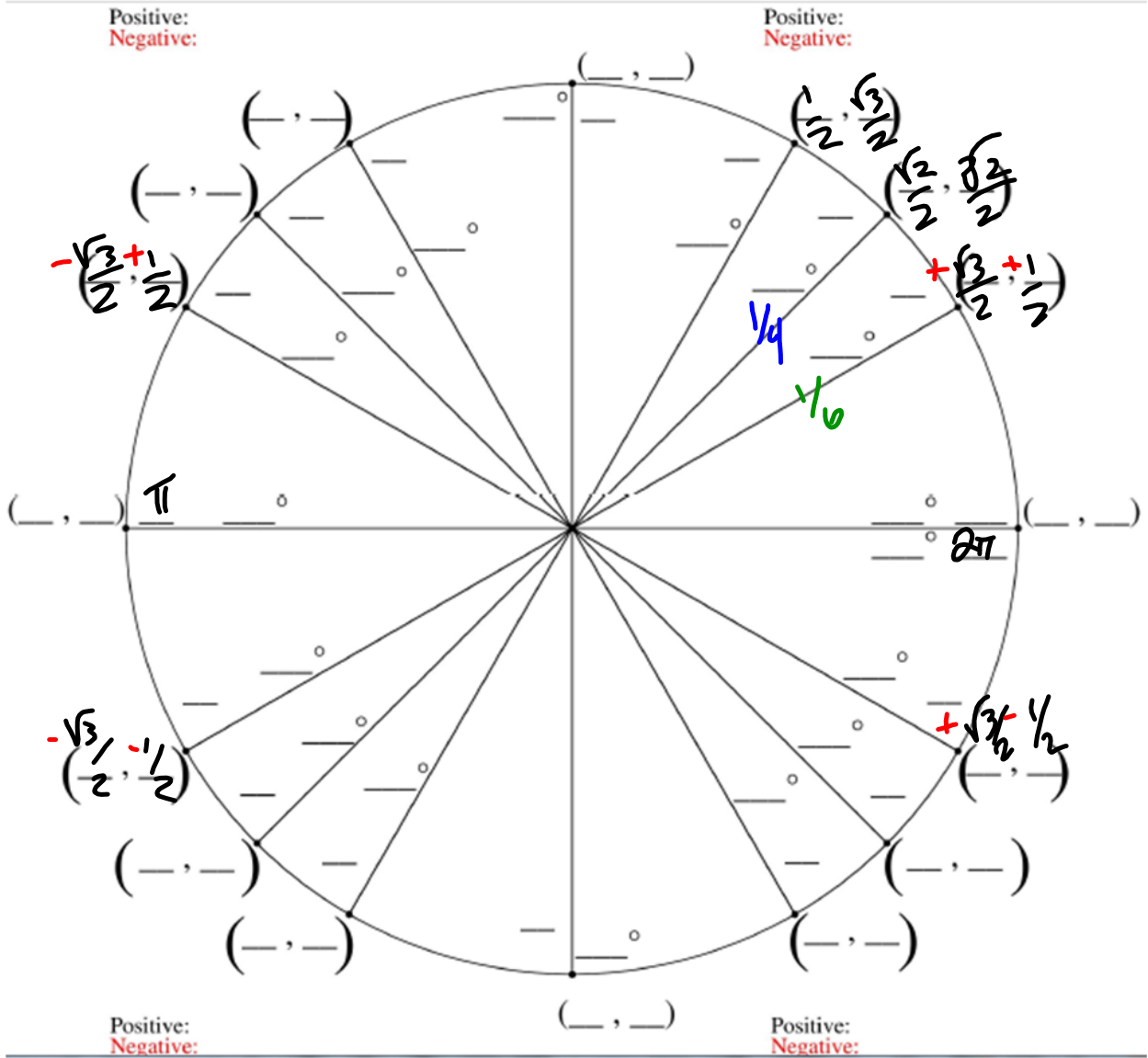


Unit Circle

Name \_\_\_\_\_

Date: 6-27-2012

Pd. \_\_\_\_\_





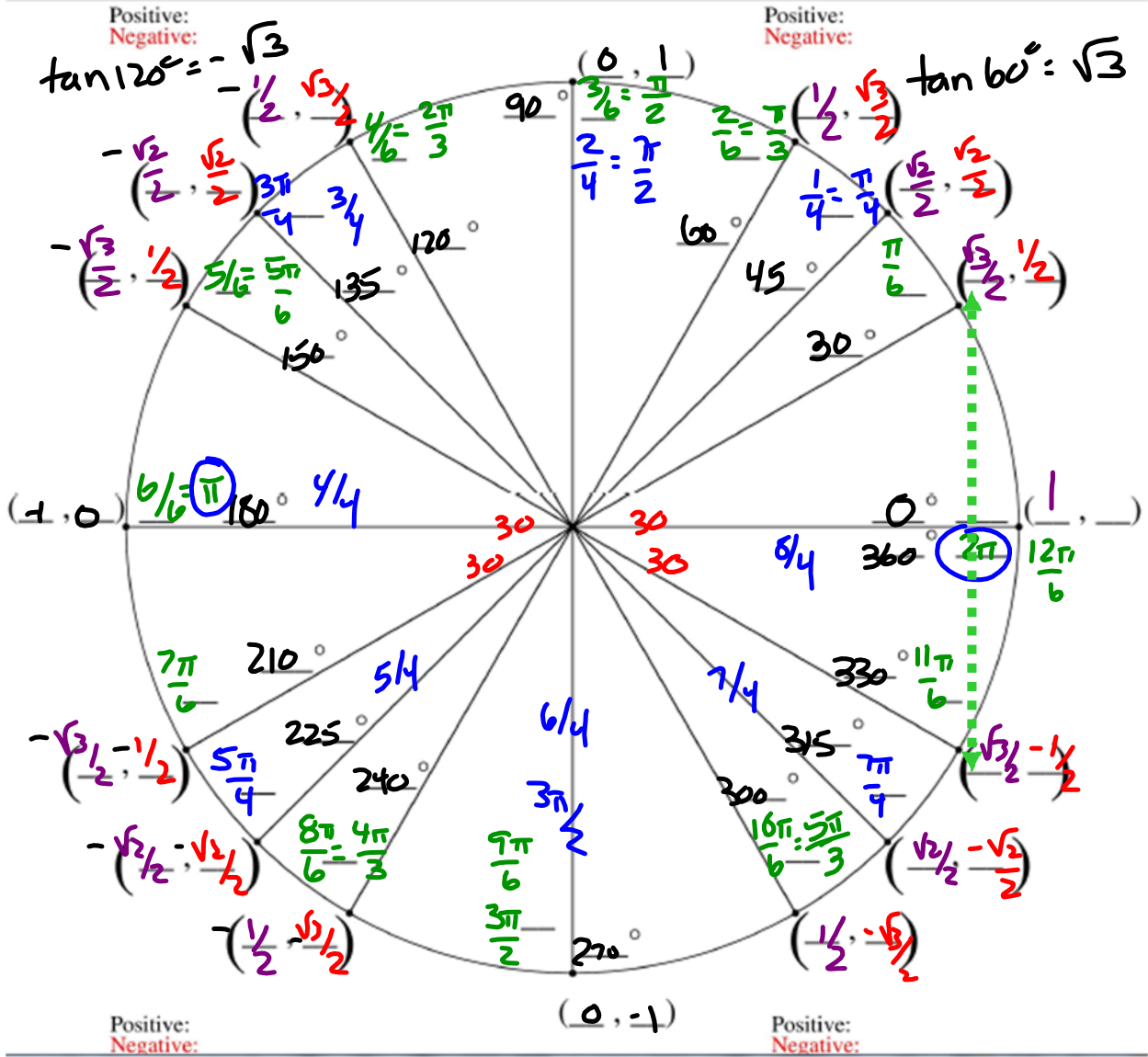
$$\left( \begin{matrix} x \\ \cos, \sin \end{matrix} \right)$$

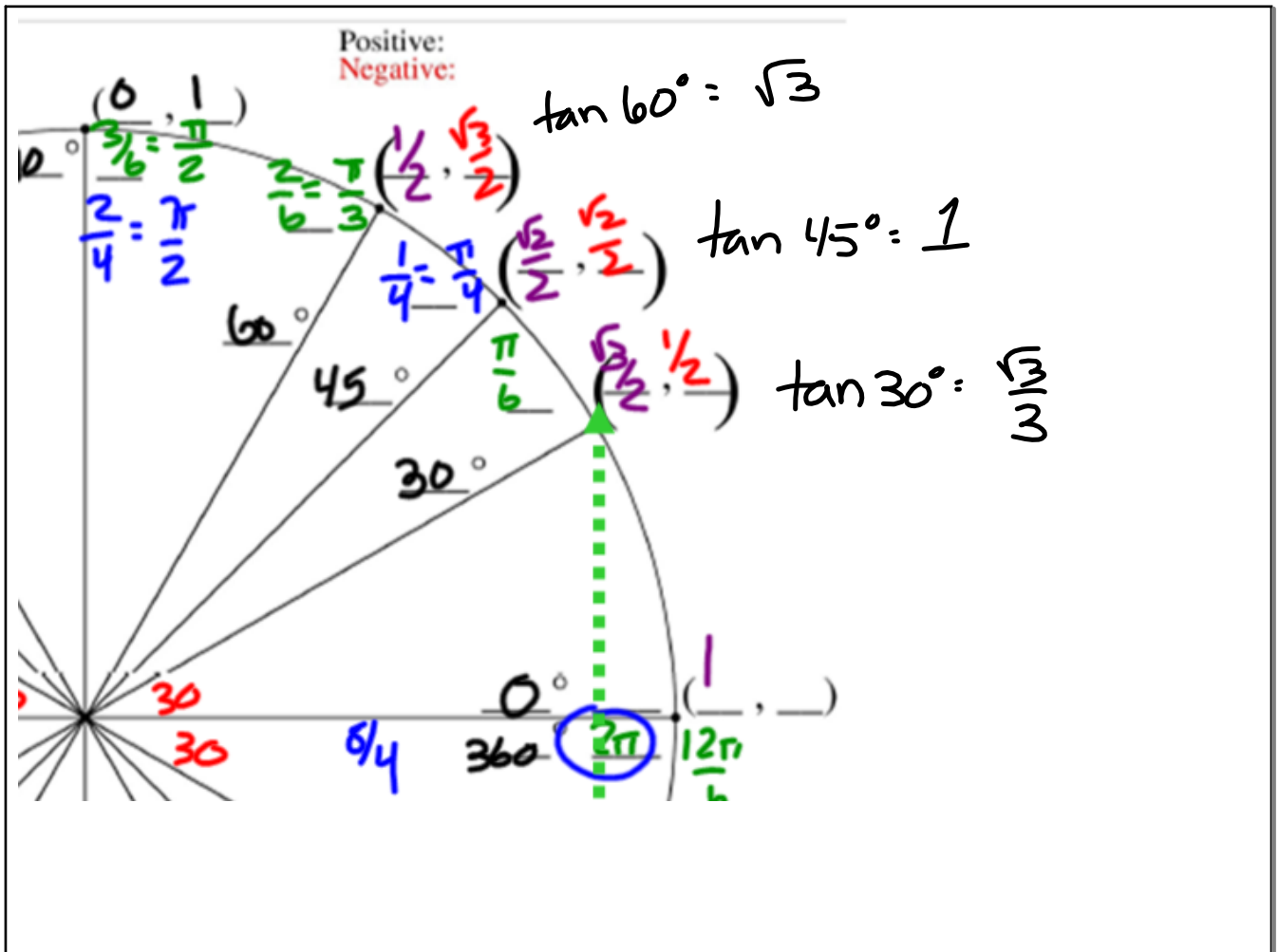
Unit Circle

Name \_\_\_\_\_

Date: 6-27-2012

Pd. \_\_\_\_\_





Curlette, D

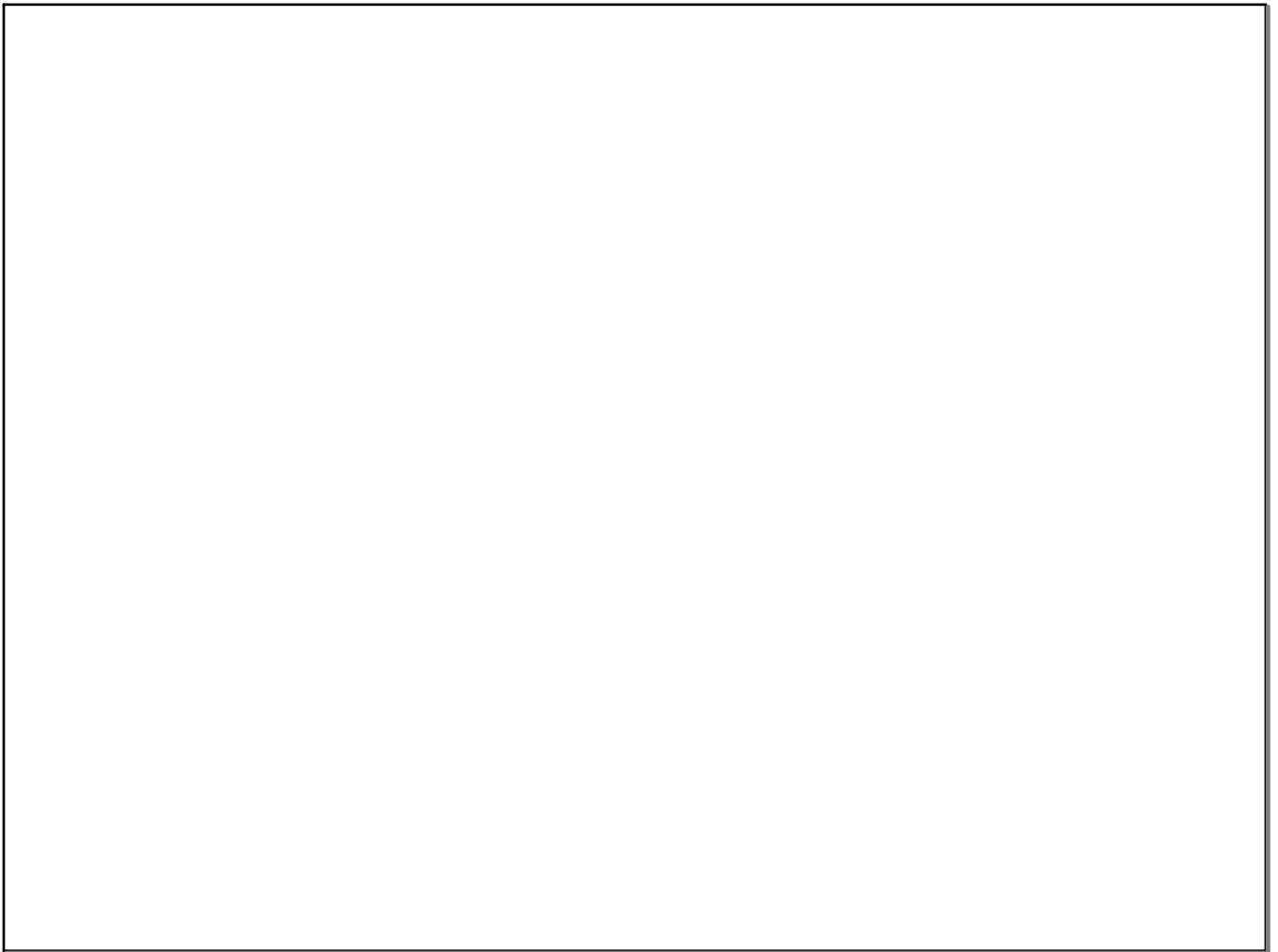
**BELL SCHEDULE**

209

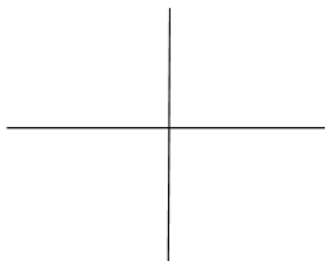
<u>PERIOD</u>	<u>TIME</u>
1	7:15 – 8:17
2	8:24 – 9:25
3	9:32 – 10:02
4	10:09 – 11:05 LUNCH A: 10:09 – 10:34 LUNCH B: 10:39 – 11:05
5	11:12 – 12:08 LUNCH A: 11:12 – 11:37 LUNCH B: 11:42 – 12:08
6	12:15 – 1:11 LUNCH A: 12:15 – 12:40 LUNCH B: 12:45 – 1:11
7	1:18 – 2:10

Go To  
Room

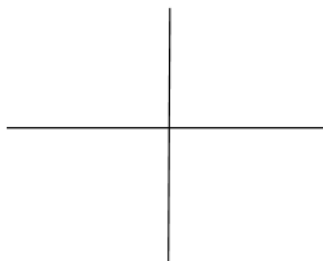
209



Sketch a  $60^\circ$  right triangle in Quad. I



Sketch a  $60^\circ$  right triangle from the x-axis in Quad. II



Sketch a  $60^\circ$  right triangle from the x-axis in Quad. III



What is the total degree of this angle between  $0^\circ$  and  $360^\circ$ ? \_\_\_\_\_

What is the total degree of this angle between  $0^\circ$  and  $360^\circ$ ? \_\_\_\_\_

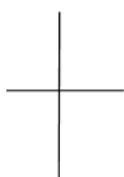
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Which angle above is the reference angle? \_\_\_\_\_ Why? \_\_\_\_\_

Which angle above is the co-terminal angle? \_\_\_\_\_ Why? \_\_\_\_\_

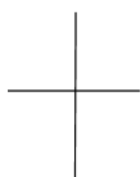
Draw the angle following angle measures on a coordinate plane.

$250^\circ$



Quad \_\_

$-70^\circ$



Quad \_\_

$410^\circ$



Quad \_\_

$-310^\circ$



Quad \_\_

$-540^\circ$



Quad \_\_

$-220^\circ$



Quad \_\_

Plot the following points, make a line from the origin to the point, make a right triangle, and then find all side lengths and angle measure.

(3, 4)

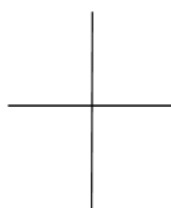


Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

(-2, 7)

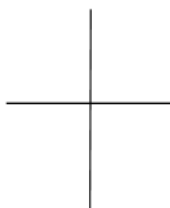


Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

(5, 1)



Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

(-3, -2)



Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_

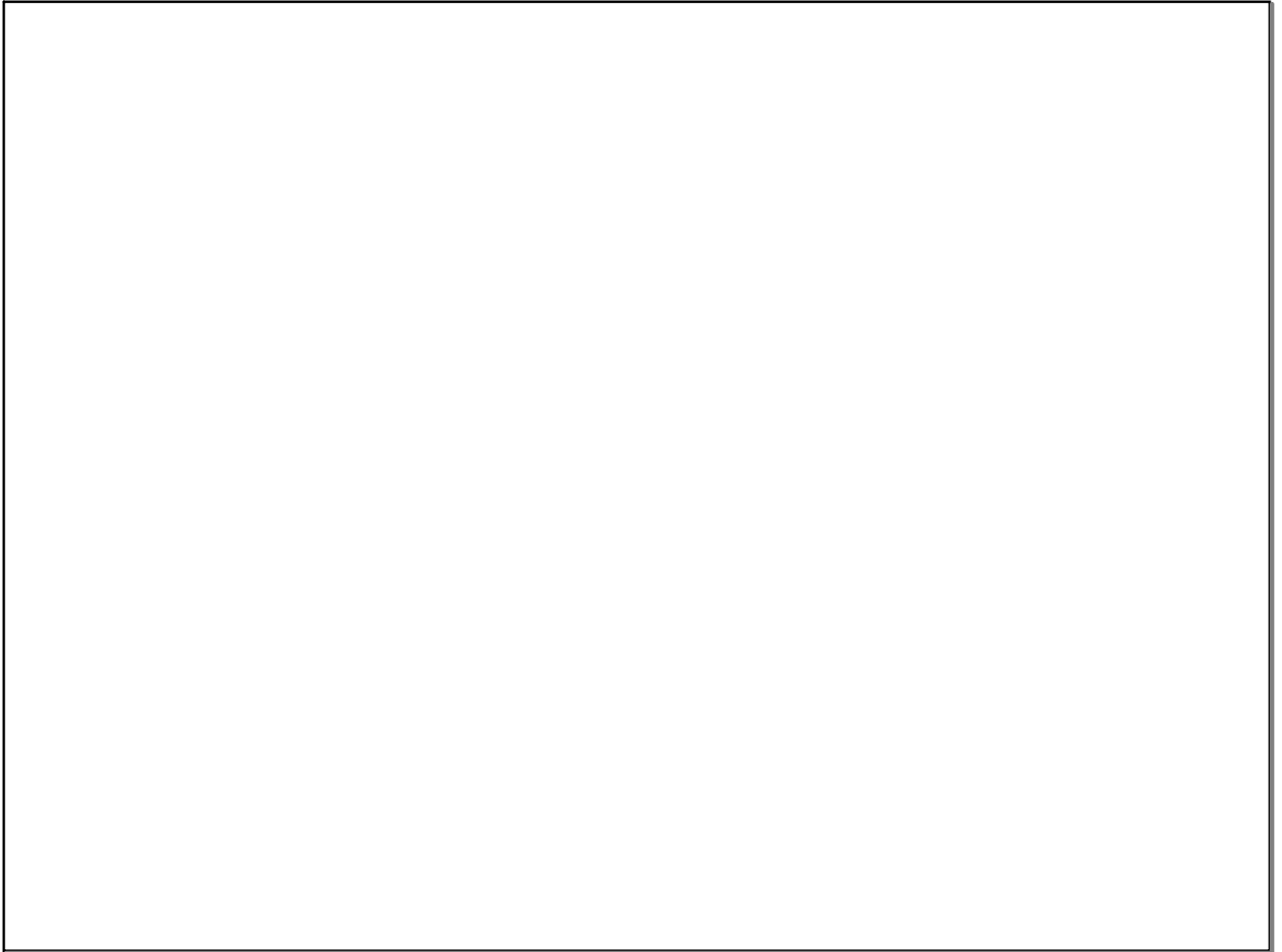
(8, -5)



Sin  $\theta$  = \_\_\_\_

Cos  $\theta$  = \_\_\_\_

Tan  $\theta$  = \_\_\_\_



What is the Pythagorean Theorem? \_\_\_\_\_ When can you use this? \_\_\_\_\_

How do you find the sides of a right triangle? 1. \_\_\_\_\_ 2. \_\_\_\_\_

How do you find the angle measures of a right triangle? \_\_\_\_\_

What does this stand for?

**SOHCAHTOA**

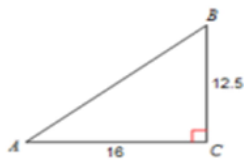
\_\_\_\_\_

\_\_\_\_\_

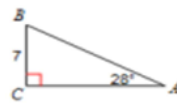
\_\_\_\_\_

**Solve each triangle. Round answers to the nearest tenth.**

1)



2)



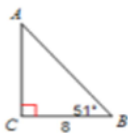
3)



4)



5)



6)



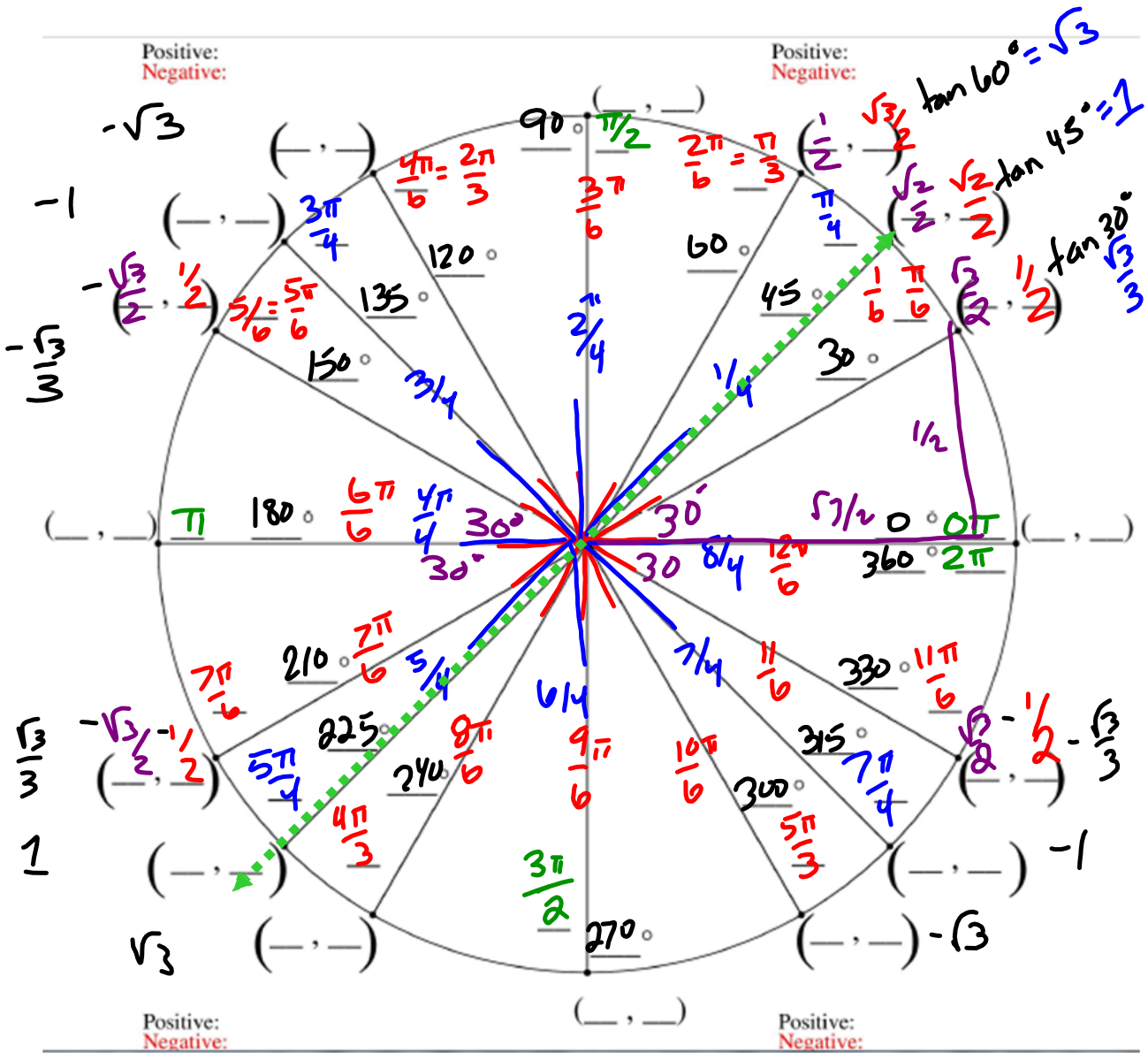
Make  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$  triangles around the coordinate plane using all quadrants (Quad I – IV).

Unit Circle

Name \_\_\_\_\_

Date: 6-27-2012

Pd. \_\_\_\_\_





Unit Circle

Name \_\_\_\_\_

Date: 6-27-2012

Pd. \_\_\_\_\_

