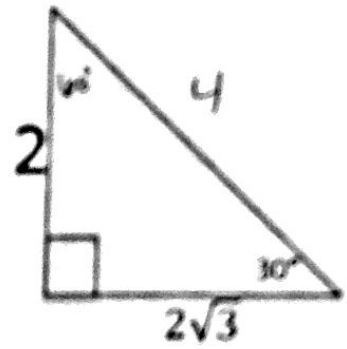
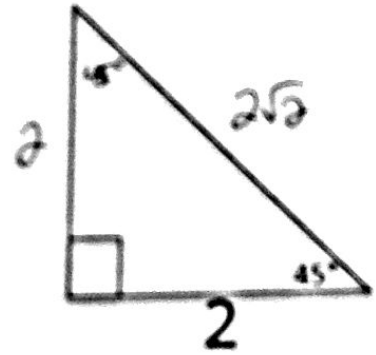
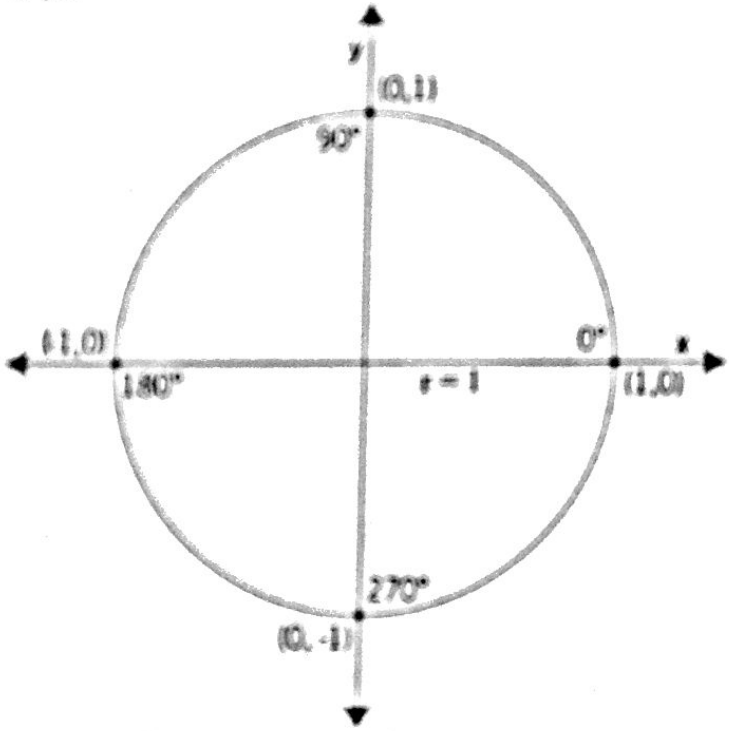
DYNAMICS OF TRIGONMETRY UNIT 2 TEST (Review) **NO CALCULATORS!**

Name: Answer Key Date: _____ Block: _____

Directions: Given the following pictures, complete the table of values (Simplify Completely).







1. Complete the table (Simplify completely)

	SinΘ	CosΘ	TanΘ	CscΘ	SecΘ	CotΘ
0°	0	1	0	U	1	U
30°	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$	2	$\frac{2\sqrt{3}}{3}$	$\sqrt{3}$
45°	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1	$\sqrt{2}$	$\sqrt{2}$	1
60°	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$	$\frac{2\sqrt{3}}{3}$	2	$\frac{\sqrt{3}}{3}$
90°	1	0	U	1	U	0

Directions: Determine the positive angles that satisfy the value of the functions where $0° \leq \Theta \leq 360°$ and $0 \leq \Theta \leq 2\pi$ (please provide both degrees and radians for each angle).

2. $\sin \Theta = -\frac{\sqrt{3}}{2}$ reference $\measuredangle = 60°$

Angle 1:

Degrees: $240°$ Radians: $\frac{4\pi}{3}$

Angle 2:

Degrees: $300°$ Radians: $\frac{5\pi}{3}$

3. $\sec \Theta = \frac{2\sqrt{3}}{3}$ reference $\measuredangle = 30°$

Angle 1:

Degrees: $30°$ Radians: $\frac{\pi}{6}$

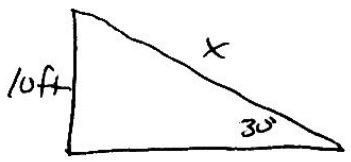
Angle 2:

Degrees: $330°$ Radians: $\frac{11\pi}{6}$

Directions: Solve the following problem (Hint: Draw a picture to help you solve it).

4. Mike is trying to build a ramp. He has to make it connect with an opening that is 10 feet tall and wants the ramp to go up at a 30° angle. How long does he need the ramp to be?

Ramp length: 20ft

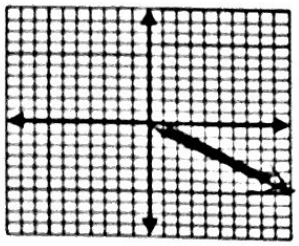


$\sin 30° = \frac{10}{x}$

$\frac{1}{2} = \frac{10}{x}$ $x = 20$

Directions: Sketch the given angle. Identify the quadrant the angle terminates in. Identify the reference angle.

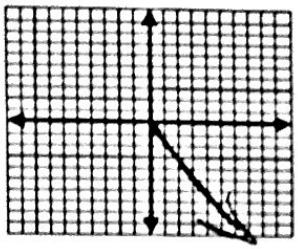
5. 330°



Quadrant: IV

Reference Angle: 30°

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

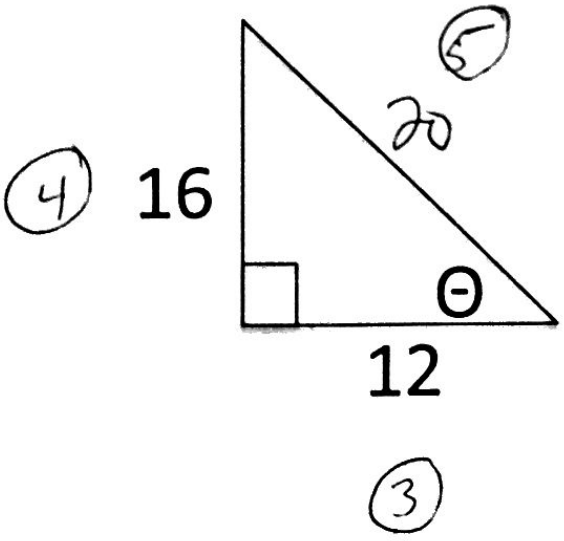


Quadrant: IV

Reference Angle: $\frac{\pi}{3}$

Directions: Calculate the exact value of the six trig functions for the following picture (Simplify Completely).

7.



$\sin\Theta =$ $\frac{4}{5}$

$\cos\Theta =$ $\frac{3}{5}$

$\tan\Theta =$ $\frac{4}{3}$

$\csc\Theta =$ $\frac{5}{4}$

$\sec\Theta =$ $\frac{5}{3}$

$\cot\Theta =$ $\frac{3}{4}$

Directions: Calculate the exact value of the six trig functions given by the angle created by the origin and the point (-10, 24) in standard position.

8.

$\text{Sin}\Theta = \frac{12}{13}$

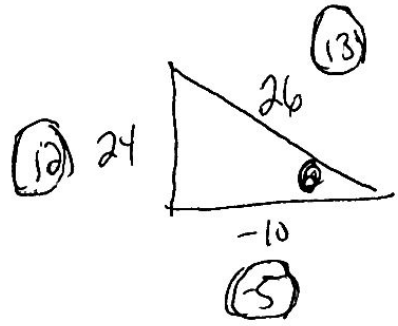
$\text{Cos}\Theta = \frac{-5}{13}$

$\text{Tan}\Theta = -\frac{12}{5}$

$\text{Csc}\Theta = \frac{13}{12}$

$\text{Sec}\Theta = -\frac{13}{5}$

$\text{Cot}\Theta = -\frac{5}{12}$



Directions: Calculate the exact value of the function.

9. $\text{Sin } 120° = \frac{\sqrt{3}}{2}$

10. $\text{Cos } 120° = -\frac{1}{2}$

11. $\text{Csc } 225° = -\sqrt{2}$

12. $\text{Sec } 225° = -\sqrt{2}$

13. $\text{Tan } 330° = -\frac{\sqrt{3}}{3}$

14. $\text{Cot } 210° = \sqrt{3}$

15. $\text{Sin } \frac{5\pi}{3} = -\frac{\sqrt{3}}{2}$

16. $\text{Cos } \frac{5\pi}{3} = \frac{1}{2}$

17. $\text{Csc } \frac{3\pi}{4} = \sqrt{2}$

18. $\text{Sec } \frac{3\pi}{4} = -\sqrt{2}$

19. $\text{Tan } \frac{7\pi}{6} = \frac{\sqrt{3}}{3}$

20. $\text{Cot } \frac{5\pi}{6} = -\sqrt{3}$