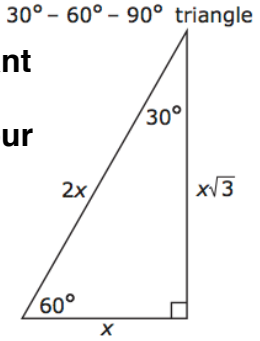
NAME:_____ DATE: 08/04/16

ASSIGNMENT: Unit Circle

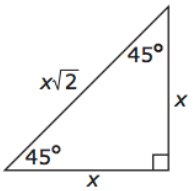
DIRECTIONS: Utilizing your new knowledge about the unit circle, find the exact measurements for the following problems. Note: "Exact" means simplified radicals with no decimals. If you need extra help, there is a completed unit circle and tutorial video on my website.

Step 1: Sketch an x and y-axis
Step 2: Draw the triangle in the correct quadrant
Step 3: The hypotenuse is always 1
Step 4: Complete the other two sides using your knowledge of special right triangles.
Step 5: Sine is the "y" coordinate
Step 6: Cosine is the "x" coordinate
Step 7: Tangent is sine divided by cosine

30° – 60° – 90° triangle



45° – 45° – 90° triangle



1.) Find the sine, cosine, and tangent for 120°

SINE	1a.) A: √3/2	B: 1/2	C: –√3/2	D: –1/2	E: –√3
COSINE	1b.) A: √3/2	B: 1/2	C: –√3/2	D: –1/2	E: –√3
TANGENT	1c.) A: √3/2	B: 1/2	C: –√3/2	D: –1/2	E: –√3

2.) Find the sine, cosine, and tangent for 150°

SINE	2a.) A: √3/2	B: 1/2	C: –√3/2	D: –1/2	E: √3
COSINE	2b.) A: √3/2	B: 1/2	C: –√3/2	D: –1/2	E: √3
TANGENT	2c.) A: √3/2	B: 1/2	C: –√3/3	D: √3/3	E: √3

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3.) Find the sine, cosine, and tangent for 300°

SINE	**3a.) A: $\sqrt{3}/2$**	**B: 1/2**	**C: $-\sqrt{3}/2$**	**D: –1/2**	**E: $-\sqrt{3}$**
COSINE	**3b.) A: $\sqrt{3}/2$**	**B: 1/2**	**C: $-\sqrt{3}/2$**	**D: –1/2**	**E: $-\sqrt{3}$**
TANGENT	**3c.) A: $\sqrt{3}/2$**	**B: 1/2**	**C: $-\sqrt{3}/2$**	**D: –1/2**	**E: $-\sqrt{3}$**

4.) Find the sine, cosine, and tangent for 225°

SINE	**4a.) A: $\sqrt{2}/2$**	**B: $-\sqrt{2}/2$**	**C: $-\sqrt{3}/2$**	**D: –1**	**E: 1**
COSINE	**4b.) A: $\sqrt{2}/2$**	**B: $-\sqrt{2}/2$**	**C: $-\sqrt{3}/2$**	**D: –1**	**E: 1**
TANGENT	**4c.) A: $\sqrt{2}/2$**	**B: $-\sqrt{2}/2$**	**C: $-\sqrt{3}/2$**	**D: –1**	**E: 1**

5.) Find the coordinates for the unit circle at each degree or radian measurement.

270°	**5a.) A: (0, 1)**	**B: (1, 0)**	**C: (0, –1)**	**D: (–1, 0)**	
300°	**5b.) A: (1/2, $\sqrt{3}/2$)**	**B: (1/2, $-\sqrt{3}/2$)**	**C: ($\sqrt{3}/2$, –1/2)**	**D: ($\sqrt{3}/2$, 1/2)**	
315°	**5c.) A: ($\sqrt{2}/2$, $\sqrt{2}/2$)**	**B: ($-\sqrt{2}/2$, $\sqrt{2}/2$)**	**C: ($\sqrt{2}/2$, $-\sqrt{2}/2$)**	**D: (1, –1)**	

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Answer Key

1.) $\frac{\sqrt{3}}{2}$; $\frac{-1}{2}$; $\sqrt{3}$; **ADE**

2.) $\frac{1}{2}$; $\frac{-\sqrt{3}}{2}$; $\frac{-\sqrt{3}}{3}$

3.) $\frac{-\sqrt{3}}{2}$; $\frac{1}{2}$; $-\sqrt{3}$

4.) $\frac{\sqrt{2}}{2}$; $\frac{-\sqrt{2}}{2}$; -1

5.) $(0, -1)$; $(1/2, -\sqrt{3}/2)$; $(\sqrt{2}/2, -\sqrt{2}/2)$