Conversion Practice – Unit Circle - Hon Geometry Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DEGREE and RADIANS INTRODUCTION**

**RADIAN AND DEGREE CONVERSION**

*If 360 = 2π radians OR 180 = π radians, then to convert between the angle measurements…*

**DEGREES to RADIANS:**

****

**Example:**

**a) 40 🡪  or 0.698 radians**

**b) 250 🡪  or 4.363 radians**

**RADIANS to DEGREES:**

****

**Example:**

**a) 🡪 **

**b) 0.5 🡪 **

**CONVERSION PRACTICE:**

**(1) Convert the degree of the angle to radian measure (round to 3 decimal places)**

**1a. 31**

**1b. 147**

**1c. 293**

**1d. 630**

**1e. 434**

**1f. -225**

**(2) Convert the degree of the angle to exact radian measure (π as a symbol and fractions)**

**2a. 35**

**2b. 160**

**2c. -15**

**2d. 660**

**2e. 434**

**2f. - 10**

**(3) Convert the radian measure to degrees (round to 3 decimal places)**

**3a. 1.4**

**3b. 0.33**

**3c. 0.68**

**3d. 6.56**

**3e. 5.8**

**3f. 9**

**(4) Convert the radian measure to exact degree.**

**4a. **

**4b. **

**4c. **

**4d. **

**4e. **

**4f. **

**CIRCLE and ANGLES:**

**Angles of a circle are measured from starting on the positive portion of the x-axis.**

* **POSITIVE Angle Measures 🡪 COUNTER CLOCKWISE Rotation**
* **NEGATIVE Angle Measures 🡪 CLOCKWISE Rotation**

**DEGREE:**

**360 is the angle measure of a circle**

**RADIANS:**

**2π radians is the angle measure of a circle**

**COTERMINAL ANGLES: Angles that have same location in a circle.**

* *Coterminal angles differ by addition or subtraction multiple of 360*
* Example: 120, - 240, 480 are all coterminal. (120 – 360 = -240; 120 + 360 = 480)

**I. Define the intervals in DEGREE measure for each quadrant of the coordinate plane.** (See Below Circle)

**Quadrant I: \_\_\_\_\_\_\_\_\_\_ Quadrant II: \_\_\_\_\_\_\_\_\_\_ Quadrant III: \_\_\_\_\_\_\_\_\_\_ Quadrant IV: \_\_\_\_\_\_\_\_\_\_**

**II. Label each given angle of the circle in EXACT RADIAN measure:**

Do you notice any pattern in denominators of the radians?

0 = \_\_\_\_\_\_\_\_\_\_\_

30 = \_\_\_\_\_\_\_\_\_\_\_

360 = \_\_\_\_\_\_\_\_\_\_\_

90 = \_\_\_\_\_\_\_\_\_\_\_

60= \_\_\_\_\_\_\_\_\_\_\_

45 = \_\_\_\_\_\_\_\_\_\_\_

330 = \_\_\_\_\_\_\_\_\_\_\_

315 = \_\_\_\_\_\_\_\_\_\_\_

300 = \_\_\_\_\_\_\_\_\_\_\_

270 = \_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_ = 240

\_\_\_\_\_\_\_\_\_\_\_ = 120

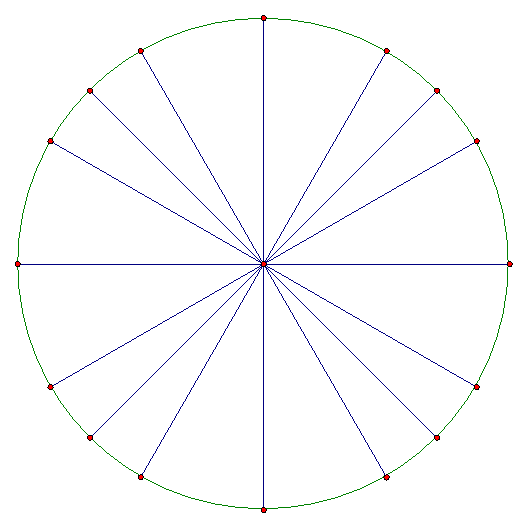
\_\_\_\_\_\_\_\_\_\_\_ = 135

\_\_\_\_\_\_\_\_\_\_\_ = 150

\_\_\_\_\_\_\_\_\_\_\_ = 180

\_\_\_\_\_\_\_\_\_\_\_ = 210

\_\_\_\_\_\_\_\_\_\_\_ = 225



**III. Define the intervals in RADIAN angle measure for each quadrant of the coordinate plane.**

**Quadrant I: \_\_\_\_\_\_\_\_\_\_ Quadrant II: \_\_\_\_\_\_\_\_\_\_ Quadrant III: \_\_\_\_\_\_\_\_\_\_ Quadrant IV: \_\_\_\_\_\_\_\_\_\_**