Name: _____ Date: _____

7-2 RADIAN ANGLE MEASUREMENT
HOMEWORK

FLUENCY

1. Convert each of the following common degree angles to angles in radians. Express your answers in exact terms of pi.

   (a) 30° (b) 45° (c) 60° (d) 180°

   (e) 300° (f) 135° (g) 270° (h) 330°

2. Convert each of the following angles given in radians into an equivalent measure in degrees. Your answers will be integers.

   (a) $\frac{2\pi}{3}$ (b) $-\frac{\pi}{2}$ (c) $\frac{11\pi}{4}$ (d) $-\frac{4\pi}{3}$

3. If an angle is drawn in standard position with each of the following radians angles, determine the quadrant its terminal ray lies in. Hint – convert each angle into degrees.

   (a) 4.75 (b) −5.28 (c) 1.65 (d) 7.38

4. Draw a rotation diagram for each of the following radian angles, which are expressed in terms of pi. Then, determine the reference angle for each, also in terms of pi. Think back to how you did this with degrees.

(a) $\frac{2\pi}{3}$ (b) $\frac{11\pi}{6}$ (c) $\frac{5\pi}{4}$

APPLICATIONS

5. A dog is attached to a 10 foot leash. He travels around an arc that has a length of 25 feet. Which of the following represents the radian angle he has rotated through?

(1) 5 (3) 2.5

(2) 7.5π (4) 1.25π

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6. A wheel whose diameter is 3 feet rolls a distance of 45 feet without slipping. Through what radian angle did the wheel rotate?

(1) 30 (3) 30π

(2) 25 (4) 12π

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7. The distance from the center of a Ferris wheel to a person who is riding is 38 feet. What distance does a person travel if the Ferris wheel rotates through an angle of 4.25 radians?

(1) 80.75 feet (3) 507 feet

(2) 42.5 feet (4) 161.5 feet

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8. A golfer swings a club about a pivot point. If the head of the club travels a distance of 26 feet and rotates through an angle of 5 radians, which of the following gives the distance the club head is from the pivot point?

(1) 1.7 feet (3) 5.2 feet

(2) 2.6 feet (4) 7.2 feet

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