College Readiness WS   Angles and their Measures

1. Express each angle in exact radian measure.
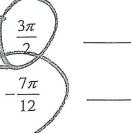
30° _____   1128° _____   2.5° _____

315° _____   206° _____   -550° _____

-14° _____   -302° _____   17° _____

2. Express each angle in degree measure

$\dfrac{3\pi}{2}$ _____ $\dfrac{7\pi}{6}$ _____ $\dfrac{34\pi}{15}$ _____

$-\dfrac{7\pi}{12}$ _____ $\dfrac{\pi}{9}$ _____   1.5 _____

$\dfrac{14\pi}{3}$ _____ $-\dfrac{11\pi}{30}$ _____   -4 _____

3. Determine two coterminal angles (one positive and one negative) for each angle.

$\theta = 59°$ _____ , _____ $\theta = -36.8°$ _____ , _____

$\theta = 125.6°$ _____ , _____ $\theta = -420°$ _____ , _____

$\theta = 1740°$ _____ , _____ $\theta = -520.1°$ _____ , _____

4. Determine two coterminal angles (one positive and one negative) for each angle. Give answer in radians.

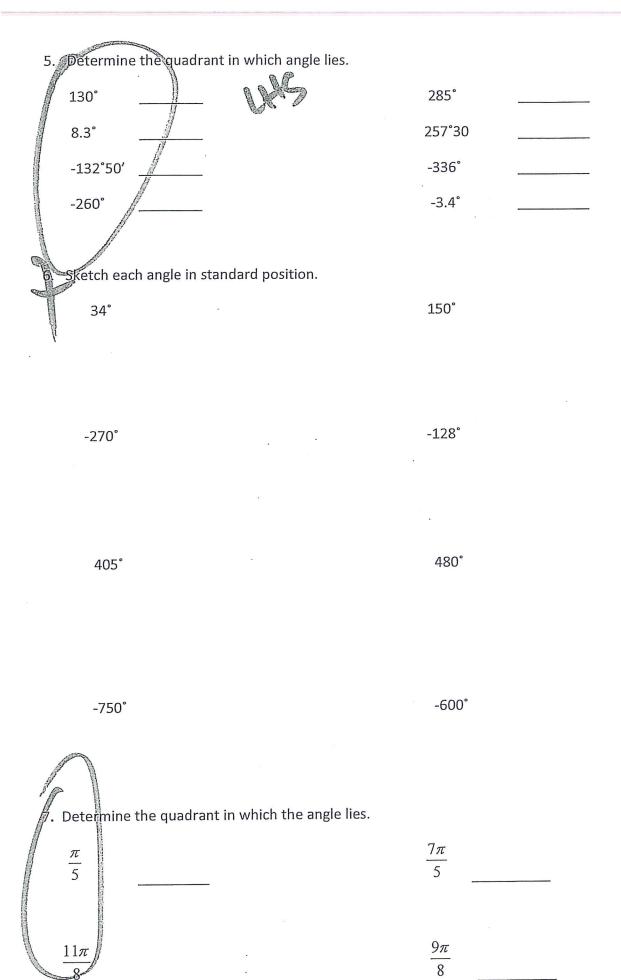$\theta = \dfrac{\pi}{6}$ _____ , _____ $\theta = \dfrac{4\pi}{3}$ _____ , _____

$\theta = \dfrac{2\pi}{11}$ _____ , _____ $\theta = -\dfrac{12\pi}{5}$ _____ , _____

$\theta = \dfrac{3\pi}{8}$ _____ , _____ $\theta = -\dfrac{39\pi}{14}$ _____ , _____

5. Determine the quadrant in which angle lies.

130° _____   285° _____

8.3° _____   257°30 _____

-132°50' _____   -336° _____

-260° _____   -3.4° _____

6. Sketch each angle in standard position.

34°   150°

-270°   -128°

405°   480°

-750°   -600°

7. Determine the quadrant in which the angle lies.

$\dfrac{\pi}{5}$ _____ $\dfrac{7\pi}{5}$ _____

$\dfrac{11\pi}{8}$ _____ $\dfrac{9\pi}{8}$ _____

$-\dfrac{\pi}{12}$ _____

-1 _____

LHS

$-\dfrac{11\pi}{9}$ _____

-2 _____

8. Sketch each angle in standard position.

$\dfrac{5\pi}{4}$

$\dfrac{2\pi}{3}$

$-\dfrac{7\pi}{4}$

$-\dfrac{5\pi}{2}$

$\dfrac{11\pi}{6}$
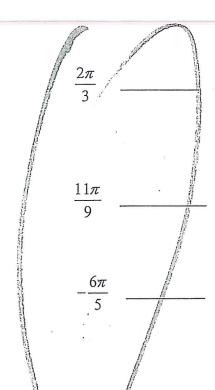
7π

4

-3

9. Find the reference angle.

35° _____

165° _____

197° _____

335° _____

-83° _____

-135° _____

574° _____

1260° _____

$\dfrac{2\pi}{3}$ _____

$\dfrac{8\pi}{9}$ _____

$\dfrac{11\pi}{9}$ _____

$\dfrac{11\pi}{6}$ _____

$-\dfrac{6\pi}{5}$ _____

$-\dfrac{13\pi}{15}$ _____

$\dfrac{7\pi}{3}$ _____

$\dfrac{16\pi}{5}$ _____

10. Find the complement and the supplement, if applicable.

$18\,°$ C: _____, S: _____

$117\,°$ C: _____, S: _____

$\dfrac{3\pi}{8}$ C: _____, S: _____

$\dfrac{4\pi}{3}$ C: _____, S: _____

11. Sofia is spinning a wheel on a game show. There are 20 values in equal-sized spaces around the circumference of the wheel. The value that Sofia needs to win is two spaces above the space where she starts her spin, and the wheel must make at least one full rotation for the spin to count. Describe a spin rotation in degrees that will give Sofia a winning result.

Space Sofia
needs to land on

Start of
Sofia's spin