Name:_____ **Date**:_____

Instructions

Do the following problems on a separate sheet of paper (or two, or three, or four). You are allowed to consult the course text, the class notes, and the notes posted on the course website. You are not, however, allowed to collaborate with other students. **Write the solutions neatly and do not use multiple columns**. Staple your write-up, using this paper as the cover page.

Problem 1 (2 points)**.** We are given an angle $\phi = \frac{11\pi}{6}$ in standard position.

(i) Find an angle coterminal with ϕ between -8π and -6π.

Answer, in degrees: _____ Answer, in radians: _____

(ii) Find *all* angles coterminal with ϕ.

Answer, in degrees: _____ Answer, in radians: _____

Problem 2 (2 points)**.** We are given an angle $\theta = 75^\circ$ in standard position.

(i) Find an angle coterminal with θ between 1440° and 1800°.

Answer, in degrees: _____ Answer, in radians: _____

(ii) (1 point) Find *all* angles coterminal with θ.

Answer, in degrees: _____ Answer, in radians: _____

Problem 3 (1 point)**.** If the actual angle of an angle is 171°, then what is its reference angle?

Answer, in degrees: _____ Answer, in radians: _____

Problem 4 (1 point)**.** If the actual angle of an angle is $\frac{11}{12}\pi$, then what is its reference angle?

Answer, in degrees: _____ Answer, in radians: _____

Problem 5 (1 point)**.** If the reference angle of an angle in the third quadrant is 24°, then what is its actual angle?

Answer, in degrees: _____ Answer, in radians: _____

Problem 6 (1 point)**.** If the reference angle of an angle in the second quadrant is $\frac{5\pi}{36}$, then what is its actual angle?

Answer, in degrees: _____ Answer, in radians: _____