

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Problem 1** (4 points). We are given an angle  $\theta = 15^\circ$  in standard position.

(i) (2 points) Find an angle coterminal with  $\theta$  between  $720^\circ$  and  $1080^\circ$ .

Answer, in degrees: \_\_\_\_\_ Answer, in radians: \_\_\_\_\_

(ii) (2 points) Find *all* angles coterminal with  $\theta$ .

Answer, in degrees: \_\_\_\_\_ Answer, in radians: \_\_\_\_\_

**Problem 2** (4 points). We are given an angle  $\phi = \frac{5\pi}{4}$  in standard position.

(i) (2 points) Find an angle coterminal with  $\phi$  between  $-4\pi$  and  $-2\pi$ .

Answer, in degrees: \_\_\_\_\_ Answer, in radians: \_\_\_\_\_

(ii) (2 points) Find *all* angles coterminal with  $\phi$ .

Answer, in degrees: \_\_\_\_\_ Answer, in radians: \_\_\_\_\_

**Problem 3** (1 point). If the acute angle of an angle is  $198^\circ$ , then what is its reference angle?

Answer, in radians: \_\_\_\_\_

**Problem 4** (1 point). If the reference angle of an angle in the fourth quadrant is  $\frac{\pi}{18}$ , then what is its actual angle?

Answer, in degrees: \_\_\_\_\_