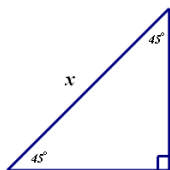


**Review for Exam on Chapter 13**  
**Periodic Functions and Trigonometry**

This is a 52 minute exam to be completed without the aid of calculators. Please *show all appropriate work* and place answers in *lowest terms*. Please work independently. This exam will be scaled to 100 points.. Good Luck!

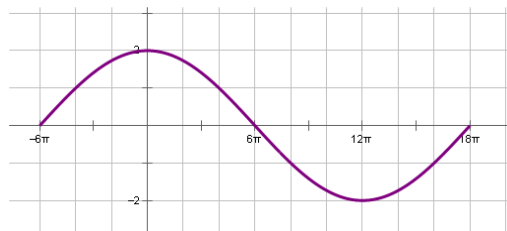
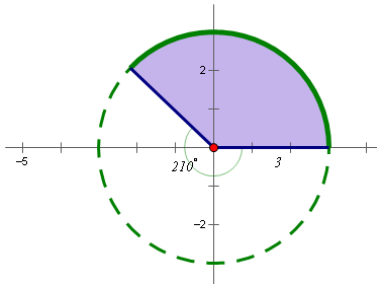
- 1) **Special Right Triangles:** (3 points) Find the value of  $x$  in the triangle below.



- 2) **Section 13.3** (4 points) Convert each degree measure to radians. If given in radians, convert to degrees. Leave answers in terms of  $\pi$  (when appropriate).

- a)  $15^\circ$
- b)  $\frac{-3\pi}{4}$
- c)  $-315^\circ$
- d)  $\frac{13\pi}{6}$

- 3) **Section 13.3** (4 points) Find the perimeter of the sector shaded below.



- 4) **Section 13.7** (6 points) Give the amplitude, period, and an equation (using sine) for the curve above.

- 5) **Section 13.4** (6 points) Find the period and amplitude of the equation given below. Then graph the function.

$$f(x) = 2 \sin\left(\frac{2}{3}x\right)$$

- 6) **Section 13.5** (6 points) Identify the period, amplitude, domain, and range of the function given below. Then graph the function.

$$f(x) = \frac{-2}{3} \cos(\pi x)$$

- 7) **Section 13.6** (6 points) Graph the function given below.

$$f(\theta) = \tan\left(\frac{3\theta}{2}\right)$$

- 8) **Section 13.7** (10 points) Sketch the graph of the equation given below.

$$y + 3 = 6 \sin\left[\frac{\pi x}{4} + \frac{\pi}{2}\right]$$

- 9) **Section 13.8** (6 points) Graph the function below.

$$f(x) = \sec(x)$$

- 10) (8 points) Find the value of the expressions below.

- a)  $\sin \frac{2\pi}{3}$
- b)  $\cos\left(-\frac{\pi}{2}\right)$
- c)  $\cos 315^\circ$
- d)  $\sin(-450^\circ)$
- e)  $\tan \frac{5\pi}{6}$
- f)  $\csc\left(-\frac{5\pi}{2}\right)$
- g)  $\cot 315^\circ$
- h)  $\sec(-210^\circ)$