

## 4-1 - 4-2 THE UNIT CIRCLE

$$180^\circ = \pi \text{ radians}$$

Ex. 1 Convert the following degree measures to radians and radian measures to degrees.

$$\frac{45^\circ}{1} \cdot \frac{\pi}{180^\circ} = \frac{45\pi}{180} = \frac{1\pi}{4}$$

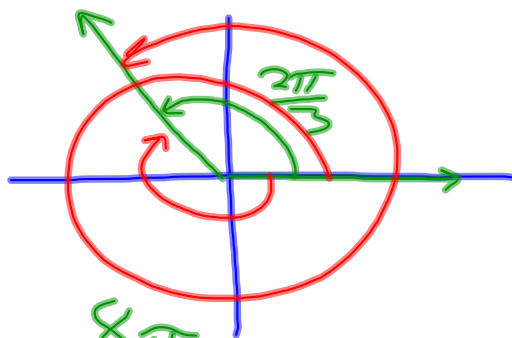
$$\frac{3\pi}{4} \cdot \frac{180^\circ}{\pi} = 135^\circ$$

$$1080^\circ = 6\pi$$

$$\frac{5\pi}{6} = 150^\circ$$

Ex. 2 Determine two coterminal angles for the given angle.

$$\frac{2\pi}{3}$$



$$\frac{6\pi}{3} + \frac{2\pi}{3} = \frac{8\pi}{3}$$

$$-\frac{6\pi}{3} + \frac{2\pi}{3} = -\frac{4\pi}{3}$$

Ex. 3 If  $\sin \theta = \frac{5}{13}$  and  $\theta$  is in quadrant I,

find the values of the six trigonometric functions of  $\theta$ .

$$\sin \theta = \frac{5}{13}$$

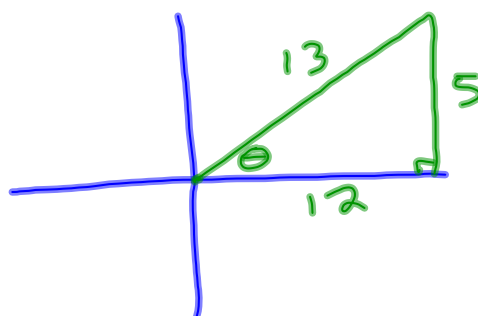
$$\cos \theta = \frac{12}{13}$$

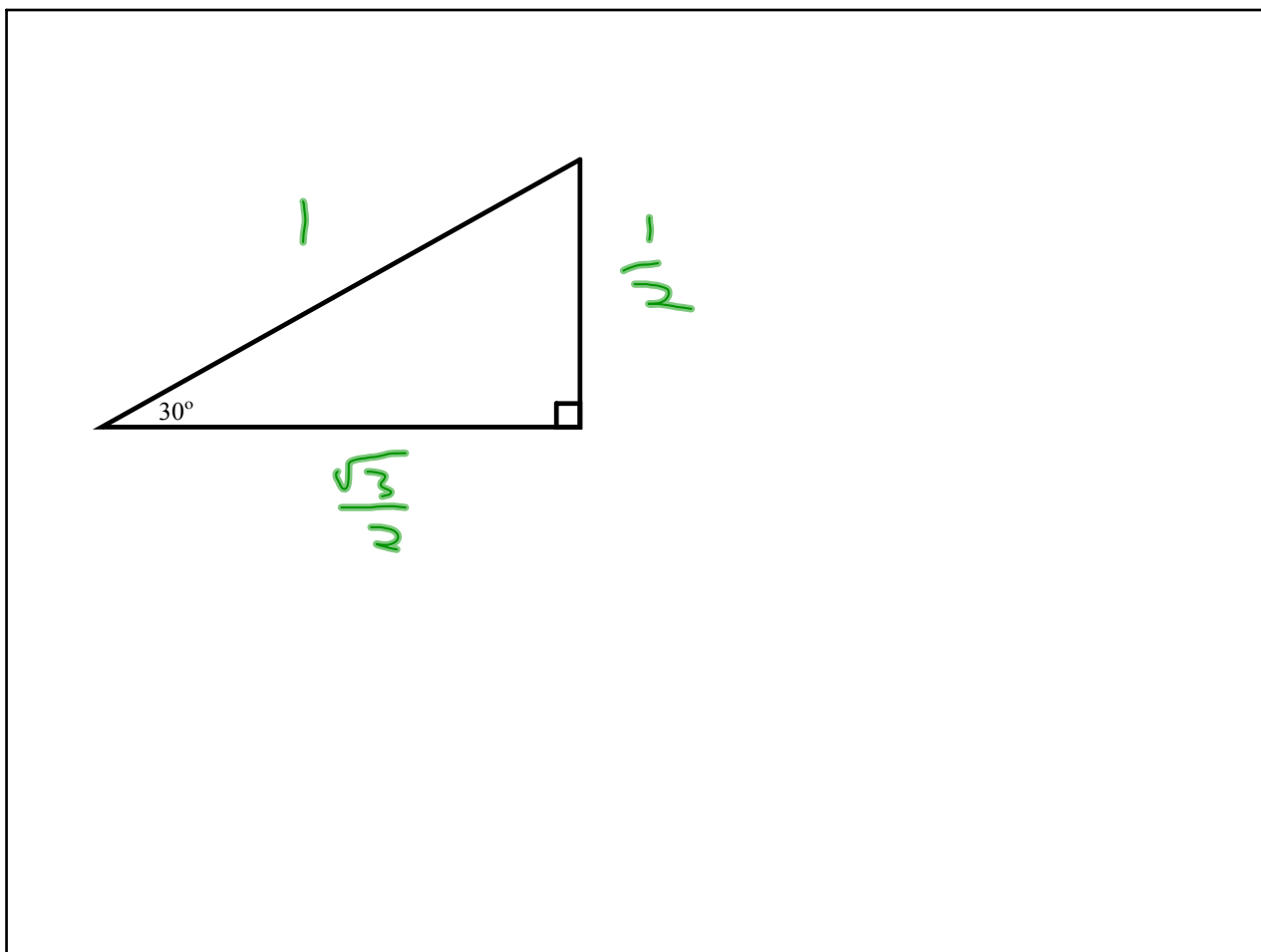
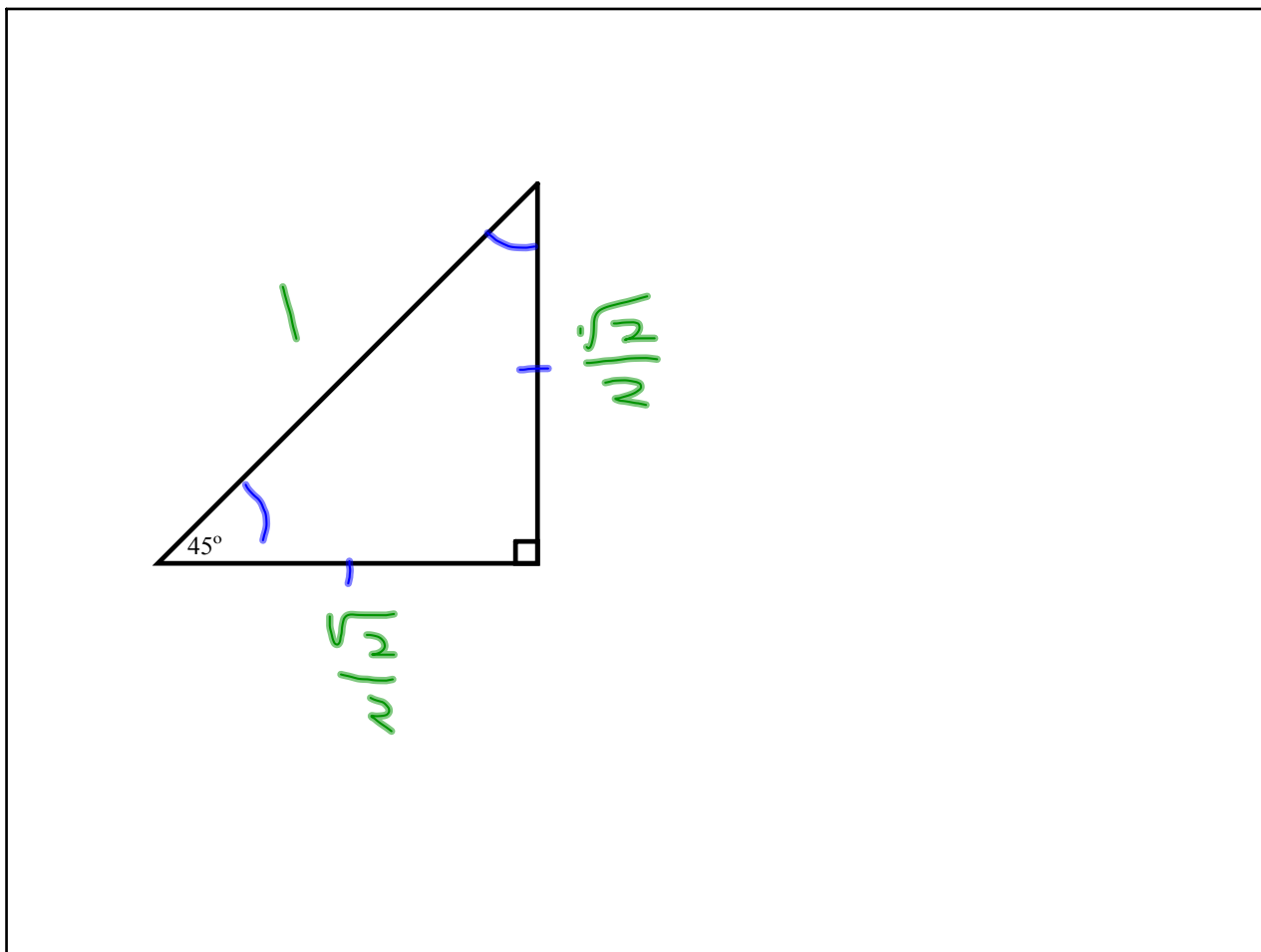
$$\tan \theta = \frac{5}{12}$$

$$\cot \theta = \frac{12}{5}$$

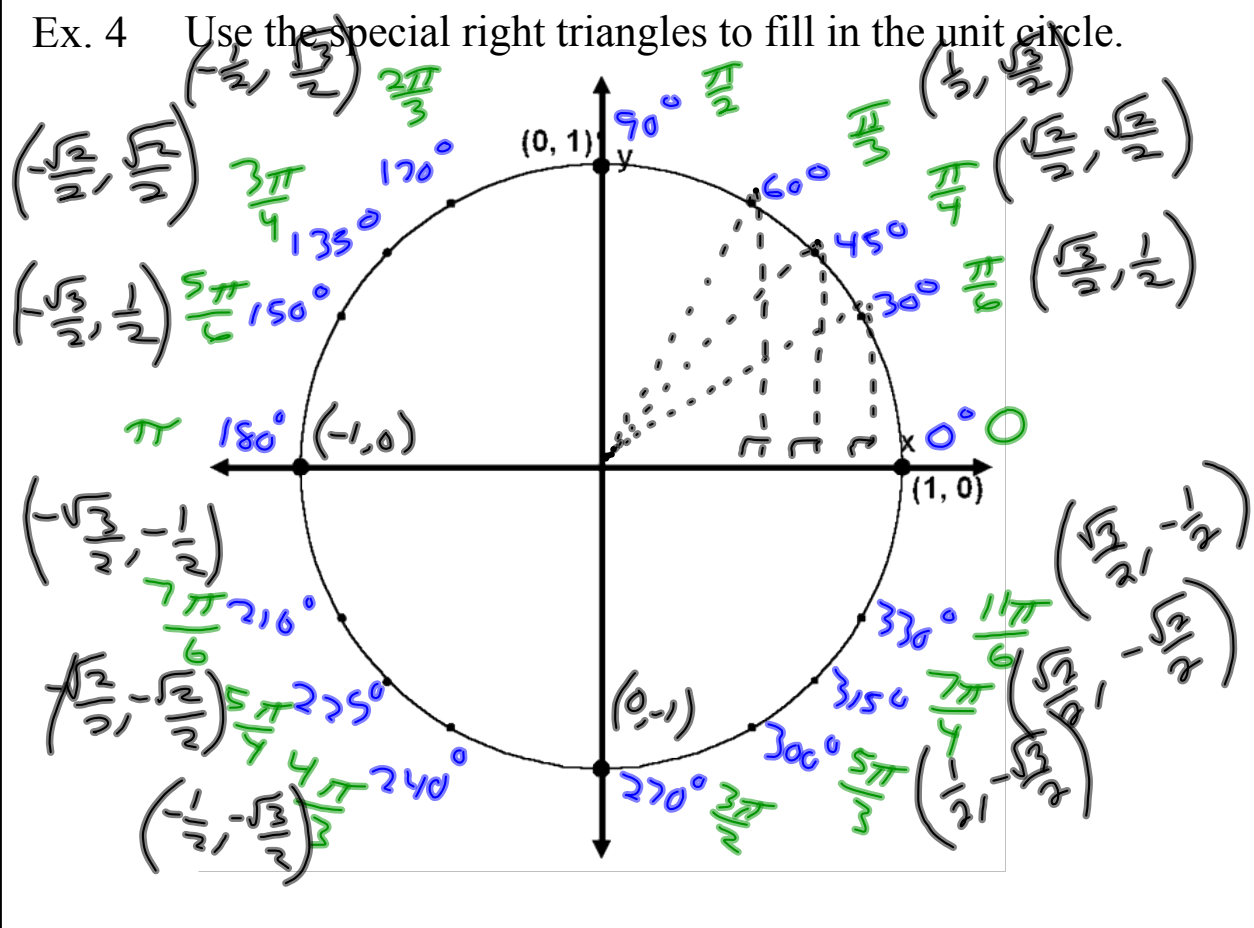
$$\sec \theta = \frac{13}{12}$$

$$\csc \theta = \frac{13}{5}$$





Ex. 4 Use the special right triangles to fill in the unit circle.



## Homework

p.265 #3-71 first problem per section

p.274 #1-67 odds