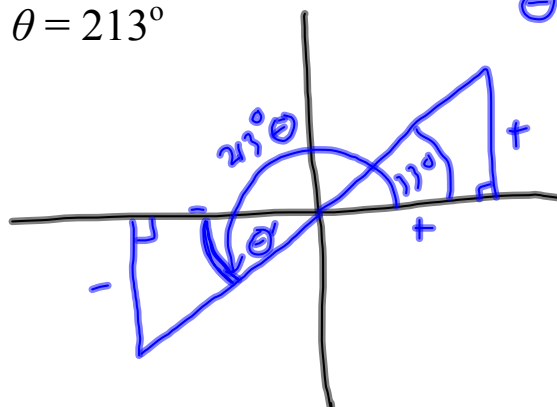## 4-4 Trigonometric Functions (continued)

Ex 1 Find the reference angle θ' for the angle θ. Then sketch θ and θ' in standard position.
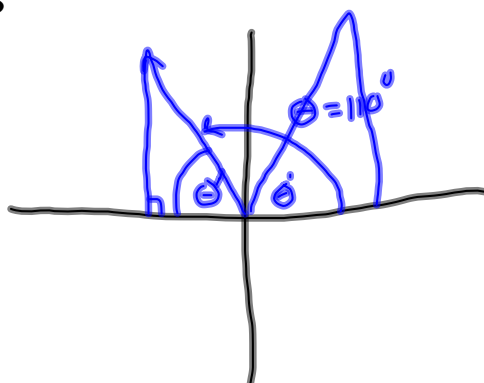
$\theta = 213^\circ$

Ex 2   Find the reference angle θ' for the angle θ. Then
        sketch θ and θ' in standard position.
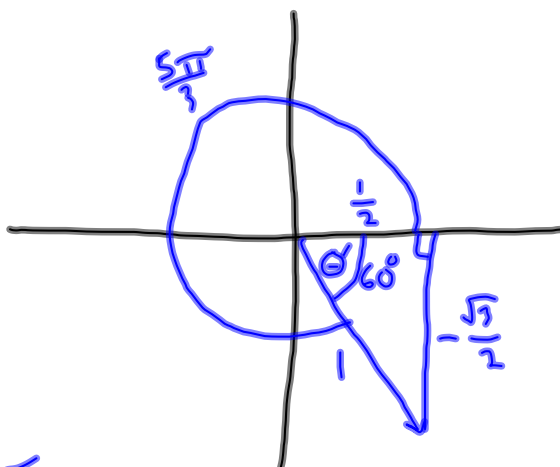
$\theta = 110°$

$\theta' = 70°$

$\theta = 110°$

Ex 3   Evaluate the sine, cosine, and tangent of the angle
        without a calculator.

$$\frac{5\pi}{3}$$

$\frac{5\pi}{3}$

(y) $\sin\theta = -\frac{\sqrt{3}}{2}$

(x) $\cos\theta = \frac{1}{2}$

$\left(\frac{y}{x}\right) \tan\theta = \dfrac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{-\sqrt{3}}{1} = -\sqrt{3}$
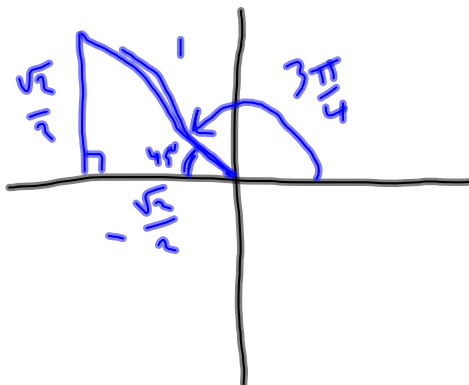
$\frac{1}{2}$

60

$-\frac{\sqrt{3}}{2}$

1

Ex 4   Evaluate the sine, cosine, and tangent of the angle without a calculator.

$$\frac{3\pi}{4}$$

$\sin\theta = \frac{\sqrt{2}}{2}$

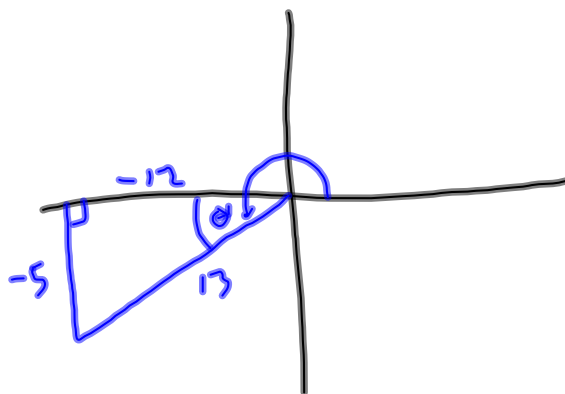$\cos\theta = -\frac{\sqrt{2}}{2}$

$\tan\theta = -1$

Ex 5   Find the indicated trigonometric value in the specified quadrant.

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

Quadrant III

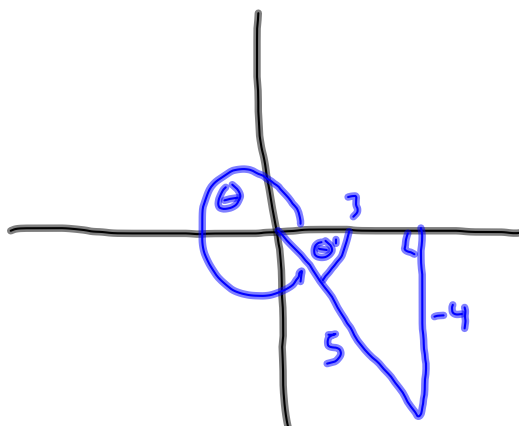$\tan\theta = \frac{-5}{-12}$

$\frac{5}{12}$

Ex 6   Find the indicated trigonometric value in the specified quadrant.

$$\tan \theta = -\frac{4}{3}$$
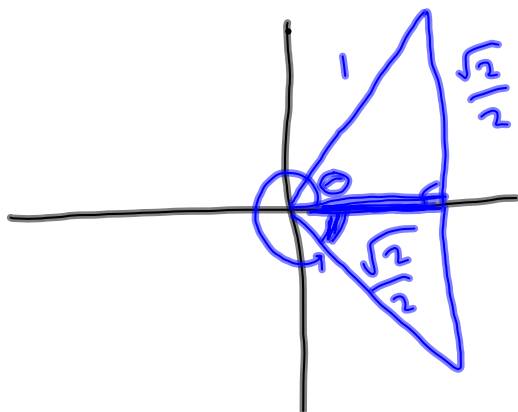
Quadrant IV

$\sin \theta = \ -\frac{4}{5}$

Ex 7   Find two solutions of the equation. Give your answers in degrees and radians.

$$\overset{(\times)}{\cos}\theta = \frac{\sqrt{2}}{2}$$

$\theta = 45°, 315°$
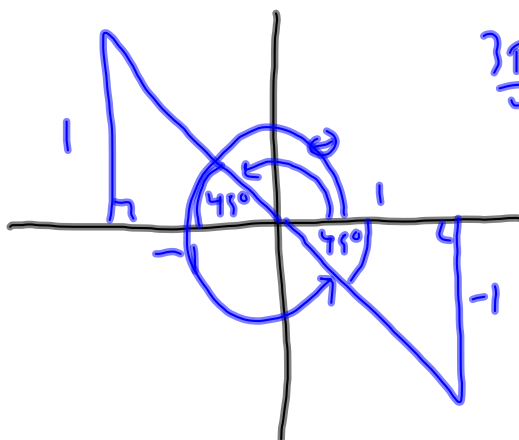
$\frac{\pi}{4}, \frac{7\pi}{4}$

Ex 8   Find two solutions of the equation. Give your answers
in degrees and radians.

$$\tan \theta = \frac{-1}{1}$$

$\frac{1}{-1}$

$\theta = 135°, 315°$

$\frac{3\pi}{4}, \frac{7\pi}{4}$

Homework
p.294
#45-69, 77-93
odds