

8.1.32:  $\frac{D}{R} = \frac{180}{\pi} \Rightarrow \frac{D}{\left(\frac{5\pi}{12}\right)} = \frac{180}{\pi} \Rightarrow D = 75^\circ$

8.1.54:  $S = r\theta$  and  $A = \frac{1}{2}r^2\theta$

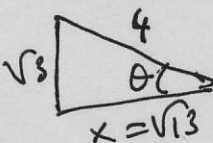
$S = 4 \times \frac{\pi}{6} = \frac{2\pi}{3}$  m  $A = 16 \times \frac{\pi/6}{2} = \frac{4\pi}{3}$  m<sup>2</sup>

8.1.64:  $\frac{D}{R} = \frac{180}{\pi} \Rightarrow \frac{D}{0.75} = \frac{180}{\pi} \Rightarrow D = \frac{(180) \times (0.75)}{\pi} \approx$  Use Calculator

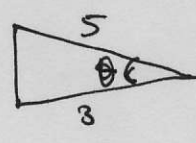
8.1.70:  $61^\circ 42' 21'' = 61^\circ + \left(\frac{42}{60} \cdot \frac{1}{60}\right)^\circ + \left(\frac{21}{60} \cdot \frac{1}{60}\right)^\circ$

~~Use your calculator~~

$= 61^\circ + \frac{7}{10}^\circ + \frac{1}{200}^\circ =$  Use your calculator

8.2.18:  $\sin \theta = \frac{\sqrt{3}}{4}$    $x^2 + 3 = 16 \Rightarrow x = \sqrt{13}$

$\cos \theta = \frac{\sqrt{13}}{4}$   $\csc \theta = \frac{4}{\sqrt{3}}$   $\sec \theta = \frac{4}{\sqrt{13}}$   $\tan \theta = \frac{\sqrt{3}}{\sqrt{13}}$   $\cot \theta = \frac{\sqrt{13}}{\sqrt{3}}$

8.2.24:  $\sec \theta = 5/3$   $4 = x$    $x^2 + 3^2 = 5^2 \Rightarrow x = 4$

$\sin \theta = \frac{4}{5}$   $\cos \theta = \frac{3}{5}$   $\csc \theta = 5/4$   $\tan \theta = 4/3$   $\cot \theta = 3/4$

8.2.50:  $\cot \theta = 2$  given

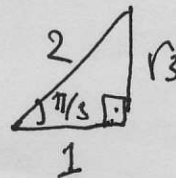
(a)  $\tan \theta = \frac{1}{\cot \theta} = \frac{1}{2}$

(b)  $\csc^2 \theta = 1 + \cot^2 \theta = 5$

(c)  $\tan(\pi/2 - \theta) = \cot(\theta) = 2$

(d)  $\sec^2 \theta = 1 + \tan^2 \theta = 1 + \frac{1}{4} = 5/4$

8.3.20:  $4 + \tan^2 \pi/3 = 4 + (\sqrt{3})^2 = 7$



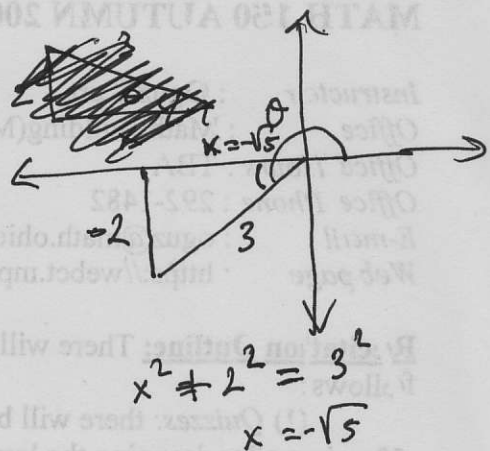
$$\underline{8.4.54} : \cos(210^\circ) = \cos(180 + 30) = -\cos 30^\circ = -\frac{\sqrt{3}}{2}$$

$$\underline{8.4.68} : \cot(-\pi/6) = -\cot \frac{\pi}{6} = -\sqrt{3}$$

$$\underline{8.4.86} : \sin \theta = -\frac{2}{3}, 180^\circ < \theta < 270^\circ$$

$$\cos \theta = \frac{-\sqrt{5}}{3}, \sec \theta = \frac{3}{-\sqrt{5}}, \tan \theta = \frac{-2}{-\sqrt{5}} = \frac{2}{\sqrt{5}}$$

$$\cot \theta = \frac{-\sqrt{5}}{-2} = \frac{\sqrt{5}}{2} \quad \csc \theta = \frac{3}{-2}$$

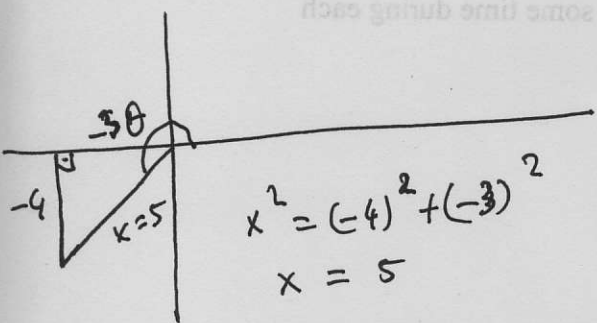


$$\underline{8.4.92} : \cot \theta = 4/3, \cos \theta < 0$$

$\cot \theta > 0, \cos \theta < 0$  happens only in 3rd quadrant

$$\sin \theta = \frac{-4}{5}, \cos \theta = \frac{-3}{5}, \tan \theta = \frac{-3}{-4} = \frac{3}{4}$$

$$\csc \theta = \frac{5}{-4}, \sec \theta = \frac{5}{-3}$$



$$\underline{8.5.20} : \sec(420^\circ) = \sec(360^\circ + 60^\circ) = \sec(60^\circ) = 2 \quad \text{///}$$

$$\underline{8.5.26} : \cot(17\pi/4) = \cot\left(\frac{16\pi}{4} + \frac{\pi}{4}\right) = \cot\left(4\pi + \frac{\pi}{4}\right)$$

$$= \cot(2(2\pi) + \pi/4) = \cot(\pi/4) = 1 \quad \text{///}$$