7.3 (cont.)

Review

$\sin 75^\circ = \sin(45^\circ + 30^\circ)$

$\sin 45\cos 30 + \cos 45 \sin 30$

$\frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{2} + \frac{\sqrt{2}}{2} \cdot \frac{1}{2}$

$\frac{\sqrt{6}}{4} + \frac{\sqrt{2}}{4} = \frac{\sqrt{6}+\sqrt{2}}{4}$

Prove: $\sec(\pi + \theta) = -\sec\theta$

$$\frac{1}{\cos(\pi+\theta)}$$

$$\frac{1}{\cos\pi\cos\theta - \sin\pi\sin\theta}$$

$$\frac{1}{-1\cos\theta - 0\sin\theta}$$

$$\frac{1}{-\cos\theta}$$

$-\sec\theta = -\sec\theta$ ✓

Ex Find $\cos(x-y)$, given $\sin x = \frac{12}{13}$, $\cos y = \frac{3}{5}$

Stay in Quad. I

$\cos x\cos y + \sin x \sin y$

$\cos x \cdot \frac{3}{5} + \frac{12}{13}\sin y$

$\frac{5}{13} \cdot \frac{3}{5} + \frac{12}{13} \cdot \frac{4}{5}$

$\frac{15}{65} + \frac{48}{65}$

$\frac{63}{65}$

* $\sin^2 x + \cos^2 x = 1$

$\left(\frac{12}{13}\right)^2 + \cos^2 x = 1$ $-\frac{144}{169}$

$\frac{-144}{169}$

$\sqrt{\cos^2 x} = \sqrt{\frac{25}{169}}$

$\cos x = \frac{5}{13}$

* $\sin^2 y + \cos^2 y = 1$

$\sin^2 y + \left(\frac{3}{5}\right)^2 = 1$ $-\frac{9}{25}$

$-\frac{9}{25}$

$\sqrt{\sin^2 y} = \sqrt{\frac{16}{25}}$

$\sin y = \frac{4}{5}$