

$$a^2 + b^2 = c^2$$

$$a^2 + 40^2 = 41^2$$

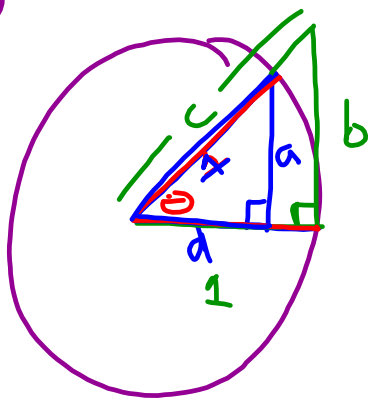
$$a^2 = 41^2 - 40^2$$

$$\sin \theta = \frac{40}{41} \quad \csc \theta = \frac{41}{40}$$

$$\cos \theta = \frac{9}{41} \quad \sec \theta = \frac{41}{9}$$

$$\tan \theta = \frac{40}{9} \quad \cot \theta = \frac{9}{40}$$

46)



$$\tan \theta = \frac{b}{1} \quad \tan \theta = b$$

$$\cos \theta = \frac{1}{c} \quad \frac{1}{\cos \theta} = c$$

$$\sin \theta = \frac{a}{1} \quad \sin \theta = a$$

$$\cos \theta = \frac{d}{1} \quad \cos \theta = d$$

30

$$\left(\sin \frac{\pi}{3} \cdot \cos \frac{\pi}{4} - \sin \frac{\pi}{4} \cdot \cos \frac{\pi}{3} \right)^2$$

$$\left(\frac{\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} \cdot \frac{1}{2} \right)^2$$

$$\left(\frac{\sqrt{6}}{4} - \frac{\sqrt{2}}{4} \right)^2 = \left(\frac{\sqrt{6} - \sqrt{2}}{4} \right)^2 = \frac{(\sqrt{6} - \sqrt{2})(\sqrt{6} - \sqrt{2})}{16}$$

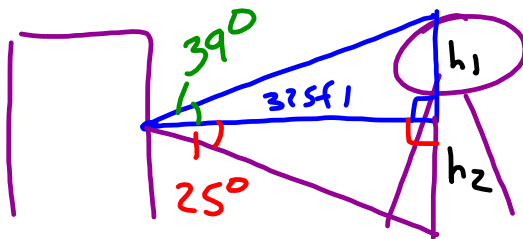
$$= \frac{6 - 2\sqrt{12} + 2}{16}$$

$$= \frac{8 - 4\sqrt{3}}{16} = \frac{2 - \sqrt{3}}{4}$$



$$\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

55



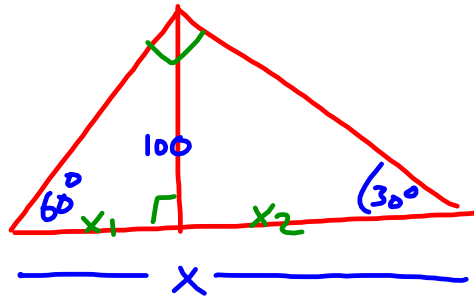
$$\tan 39^\circ = \frac{h_1}{325}$$

$$325 \tan 39^\circ = h_1 = 263.18_{\text{ft}}$$

$$\tan 25^\circ = \frac{h_2}{325}$$

$$325 \tan 25^\circ = h_2 = 151.55_{\text{ft}}$$

$$h_1 + h_2 = h = 414.73_{\text{ft}}$$

41

$$\tan 60^\circ = \frac{100}{x_1}$$

$$x_1 = \frac{100}{\tan 60^\circ}$$

$$\tan 30^\circ = \frac{100}{x_2}$$

$$x_2 = \frac{100}{\tan 30^\circ}$$

$$X = x_1 + x_2 = \frac{100}{\tan 60^\circ} + \frac{100}{\tan 30^\circ} = 230.9$$