

Advanced Math

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$$24) \cos \theta \sec \theta = 1$$

$$\cos \theta \cdot \frac{1}{\cos \theta} = 1$$

$$1 = 1$$

□

$$26) \cot \alpha \sin \alpha = \cos \alpha$$

$$\frac{\cos \alpha}{\sin \alpha} \sin \alpha = \cos \alpha$$

$$\cos \alpha = \cos \alpha$$

□

$$28) (1 + \sin \theta)(1 - \sin \theta) = \cos^2 \theta$$

$$1 - \sin^2 \theta = \cos^2 \theta$$

$$(\cos^2 \theta + \sin^2 \theta) - \sin^2 \theta = \cos^2 \theta$$

$$\cos^2 \theta = \cos^2 \theta$$

□

$$30) \sin^2 \theta - \cos^2 \theta = 2 \sin^2 \theta - 1$$

$$\sin^2 \theta - \cos^2 \theta = 2 \sin^2 \theta - (\cos^2 \theta + \sin^2 \theta)$$

$$\sin^2 \theta - \cos^2 \theta = 2 \sin^2 \theta - \cos^2 \theta - \sin^2 \theta$$

$$\sin^2 \theta - \cos^2 \theta = \sin^2 \theta - \cos^2 \theta$$

□

$$32) \frac{\tan \beta + \cot \beta}{\tan \beta} = \csc^2 \beta$$

$$1 + \frac{\cot \beta}{\tan \beta} = \csc^2 \beta$$

$$1 + \cot^2 \beta = \csc^2 \beta$$

$$1 + \frac{\cos^2 \beta}{\sin^2 \beta} = \csc^2 \beta$$

$$\frac{\sin^2 \beta + \cos^2 \beta}{\sin^2 \beta} = \csc^2 \beta$$

$$\frac{1}{\sin^2 \beta} = \csc^2 \beta$$

$$\csc^2 \beta = \csc^2 \beta$$

□

$$34a) \csc 30^\circ = 2$$

$$b) \sin \frac{\pi}{4} = \frac{1}{\sqrt{2}}$$

$$36a) \sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

$$b) \csc 45^\circ = \sqrt{2}$$

$$38a) .4348 \quad 40a) .9598 \quad 42a) .9964 \quad 44a) 1.3667 \quad 46a) 1.1884$$

$$b) .4348 \quad b) .9609 \quad b) 1.0036 \quad b) .7317 \quad b) .5463$$

$$48a) 45^\circ \text{ or } \frac{\pi}{4} \quad 50a) 60^\circ \text{ or } \frac{\pi}{3} \quad 52a) 60^\circ \text{ or } \frac{\pi}{3} \quad 54a) 10.002^\circ \text{ or } .174$$

$$b) 45^\circ \text{ or } \frac{\pi}{4} \quad b) 60^\circ \text{ or } \frac{\pi}{3} \quad b) 45^\circ \text{ or } \frac{\pi}{4} \quad b) 29.002^\circ \text{ or } .5061$$

$$56a) 21.9996^\circ \text{ or } .3840 \quad 58) 6 \quad 62) 68.7$$

$$b) 68.0004^\circ \text{ or } 1.187 \quad 60) 20\sqrt{2} \quad 64) 96.6$$

$$65) \frac{69}{4} \text{ Ft or } 17\frac{1}{4} \text{ Ft} \quad 66) 270 \text{ Ft} \quad 68) 137.6 \text{ Ft} \quad 69) 1144.9 \text{ Ft}$$

$$70) 9.59^\circ \quad 71) (x_1, y_1) = (28\sqrt{3}, 28) \quad 72) 6.57 \text{ cm}$$

$$(x_2, y_2) = (28, 28\sqrt{3})$$