35. $\cot\theta = -\frac{4}{3}$, $270° < \theta < 360°$; $\sin\theta$

$$1 + \left(-\frac{4}{3}\right)^2 = \csc^2\theta$$

$$\frac{9}{9} + \frac{16}{9} = \csc^2\theta$$

$$\pm\sqrt{\frac{25}{9}} = \sqrt{\csc^2\theta}$$

$$-\frac{5}{3} = \csc\theta$$

$$-\frac{3}{5} = \sin\theta$$

51. $1 + \cot^2\theta - \cos^2\theta - \cos^2\theta\cot^2\theta$

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

$\csc^2\theta - \cos^2\theta - \cos^2\theta\cot^2\theta$

$\csc^2\theta - \cos^2\theta(1+\cot^2\theta)$

$\csc^2\theta - \cos^2\theta\csc^2\theta$

$\csc^2\theta(1-\cos^2\theta)$

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

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

$\csc^2\theta\sin^2\theta$

$\frac{1}{\sin^2\theta}\sin^2\theta$

$\frac{\sin^2\theta}{\sin^2\theta}$

1

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

$\csc^2\theta - \cos^2\theta\frac{1}{\sin^2\theta}$

$\csc^2\theta - \frac{\cos^2\theta}{\sin^2\theta}$

$\cot^2\theta = \frac{\cos^2\theta}{\sin^2\theta}$

$\csc^2\theta - \cot^2\theta$

1

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

$-\cot^2 - \cot^2\theta$

$1 = \csc^2\theta - \cot^2\theta$