48. $\sin x \cos x \sec x \cot x$

$\sec x = \frac{1}{\cos x}$

$\cot x = \frac{\cos x}{\sin x}$

$\cancel{\sin x}\ \cancel{\cos x}\ \frac{1}{\cancel{\cos x}}\ \frac{\cos x}{\cancel{\sin x}}$

$\cos x$

49. $\cos x \tan x + \sin x \cot x$

$\tan x = \frac{\sin x}{\cos x}$

$\cancel{\cos x}\ \frac{\sin x}{\cancel{\cos x}} + \cancel{\sin x}\ \frac{\cos x}{\cancel{\sin x}}$

$\sin x + \cos x$

36. $\cot \theta = -8, \boxed{\frac{3\pi}{2} < \theta < 2\pi}; \csc \theta$

$1 + (-8)^2 = \csc^2\theta$

$\pm\sqrt{65} = \sqrt{\csc^2\theta}$

$-\sqrt{65} = \csc\theta$

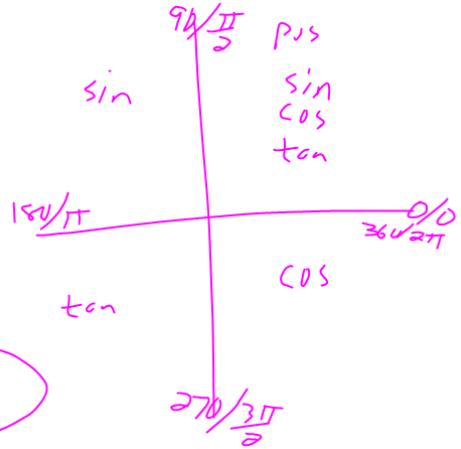
27. $\sin\theta = \frac{1}{4}, \boxed{0 < \theta < \frac{\pi}{2}}; \cos\theta$

$\left(\frac{1}{4}\right)^2 + \cos^2\theta = 1 - \frac{1}{16}$

$-\frac{1}{16}$

$\sqrt{\cos^2\theta} = \pm\sqrt{\frac{15}{16}}$

$\cos\theta = \frac{\sqrt{15}}{4}$



44. $\dfrac{\sec x}{\tan x}$

$\sec x \dfrac{1}{\tan x}$

$\sec x = \dfrac{1}{\cos x}$

$\tan x = \dfrac{\sin x}{\cos x}$

$\dfrac{\frac{1}{\cos x}}{\frac{\sin x}{\cos x}}$

$\sec x \cot x$

$\frac{1}{\cos x} \cdot \frac{\cos x}{\sin x}$

$\frac{1}{\cancel{\cos x}} \cdot \frac{\cancel{\cos x}}{\sin x}$

$\frac{1}{\sin x}$

$\csc x$

$\frac{1}{\sin x} = \csc x$

56 $W = \dfrac{eAS}{\sec\theta} = eAS\dfrac{1}{\sec\theta}$

$= eAS\cos\theta$