Problem 3. *Give an exact answer for the following expressions:*

a) $\tan(\sin^{-1}(-1/2))$

$\sin\theta = -\frac{1}{2}$ @ $\theta = \frac{-\pi}{6}$

$\tan\left(-\frac{\pi}{6}\right) = \frac{-\sqrt{3}}{3}$

b) $\csc(\cos^{-1}(1/3))$

$\cos\theta = \frac{1}{3}$ $0 < \theta < \frac{\pi}{2}$

$x = 1$ $y = ?$ $r = 3$

$\csc\theta = \frac{r}{y} = \frac{3}{2\sqrt{2}} = \frac{3\sqrt{2}}{4}$

$x^2 + y^2 = r^2$

$1 + y^2 = 9$

$y = \sqrt{8} = 2\sqrt{2}$

c) $\tan^{-1}(\tan(7\pi/6))$

$\tan^{-1}\left(\tan\left(\frac{7\pi}{6}\right)\right) = \tan^{-1}\left(\frac{\sqrt{3}}{3}\right) = \frac{\pi}{6}$