3.2 General Solutions of Inverse Values **Name:**_____

For each problem find the exact:
a.) general solution in **radians**
b.) first three positive values of x

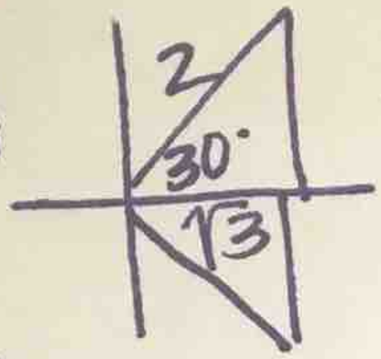
1. $x = \sin^{-1}\left(\frac{1}{2}\right)$

a. $\frac{\pi}{6} + 2\pi n$

$\frac{5\pi}{6} + 2\pi n$

b. $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{13\pi}{6}$

2. $x = \cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$ $\frac{A}{H}$



$\frac{\pi}{6}$

$\frac{11\pi}{6}$

S A T C

a. $\frac{\pi}{6} + 2\pi n$

$\frac{11\pi}{6} + 2\pi n$

$\frac{\pi}{6} + \frac{12\pi}{6} = \frac{13\pi}{6}$

b. $\frac{\pi}{6}, \frac{11\pi}{6}, \frac{13\pi}{6}$

3. $\tan x = \left(\frac{-\sqrt{3}}{1}\right)$

a. $\frac{2\pi}{3} + \pi n$

b. $\frac{2\pi}{3}, \frac{5\pi}{3}, \frac{8\pi}{3}$

4. $\sin x = \left(-\frac{1}{\sqrt{2}}\right)$

a. $\frac{5\pi}{4} + 2\pi n$

$\frac{7\pi}{4} + 2\pi n$

b. $\frac{5\pi}{4}, \frac{7\pi}{4}, \frac{13\pi}{4}$

5. $x = \cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

a. $\frac{5\pi}{6}, \frac{7\pi}{6}$

b. $\frac{5\pi}{6}, \frac{7\pi}{6}, \frac{17\pi}{6}$

6. $\cos x = \left(\frac{-\sqrt{2}}{2}\right)$ $\frac{-\sqrt{2}}{2} = \frac{-1}{\sqrt{2}}$

a. $\frac{3\pi}{4}, \frac{5\pi}{4}$

b. $\frac{3\pi}{4}, \frac{5\pi}{4}, \frac{11\pi}{4}$

7. $x = \tan^{-1}(-1)$

a. $\frac{3\pi}{4} + \pi n$

b. $\frac{3\pi}{4}, \frac{7\pi}{4}, \frac{11\pi}{4}$

8. $x = \csc^{-1}(\frac{-2}{1})$ HYP / OPP

a. $\frac{7\pi}{6} + 2\pi n$

$\frac{11\pi}{6} + 2\pi n$

b. $\frac{7\pi}{6}, \frac{11\pi}{6}, \frac{19\pi}{6}$

9. $x = \cos^{-1}(0)$

a. $\frac{\pi}{2} + \pi n$

b. $\frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}$

10. $\sin x = (-1)$

a. $\frac{3\pi}{2} + 2\pi n$

b. $\frac{3\pi}{2}, \frac{7\pi}{2}, \frac{11\pi}{2}$

11. $x = \sec^{-1}(-2)$

a. $\frac{2\pi}{3} + 2\pi n$

$\frac{4\pi}{3} + 2\pi n$

b. $\frac{2\pi}{3}, \frac{4\pi}{3}, \frac{8\pi}{3}$

12. $x = \cot^{-1}(\sqrt{3})$

a. $\frac{\pi}{6} + \pi n$

b. $\frac{\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$