Video Quiz 7 (100 pts.) Name: _KEY_
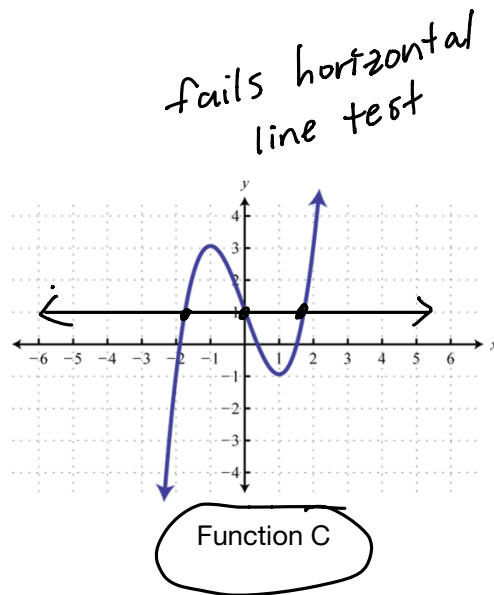
1. (1 pt.) Which of the following functions is NOT one-to-one?

fails horizontal line test
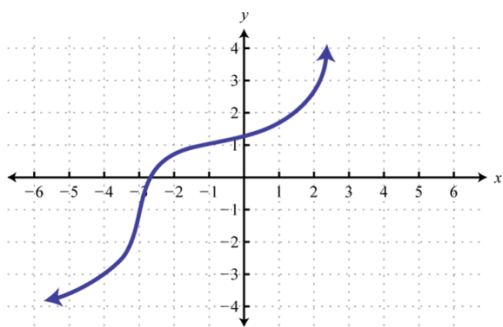
Function A
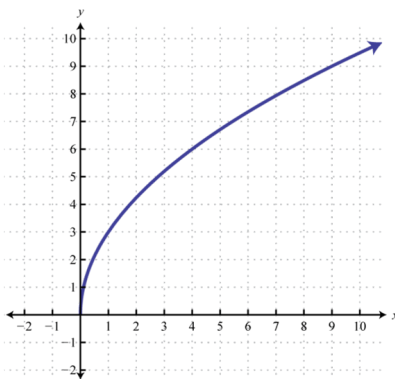
Function B

Function C

2. (1 pt.) Find the exact value of $\sin(\sin^{-1}(3.1415))$.

3.1415 is not in domain of $\sin^{-1}$
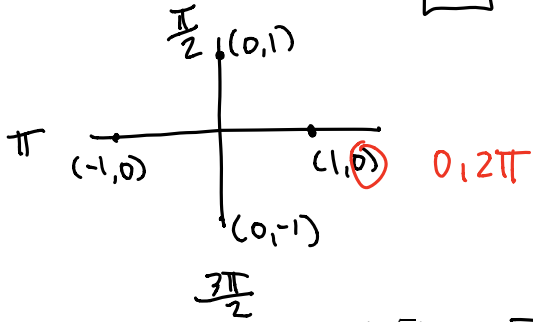
$= \boxed{\text{DNE}}$

3. (1 pt.) (True) or False: $y = \sin x$ is one-to-one in the interval $\left[-\dfrac{\pi}{2}, \dfrac{\pi}{2}\right]$.

4. (1 pt.) True or (False:) $y = \sin^{-1} x$ is equivalent to $y = \dfrac{1}{\sin x}$
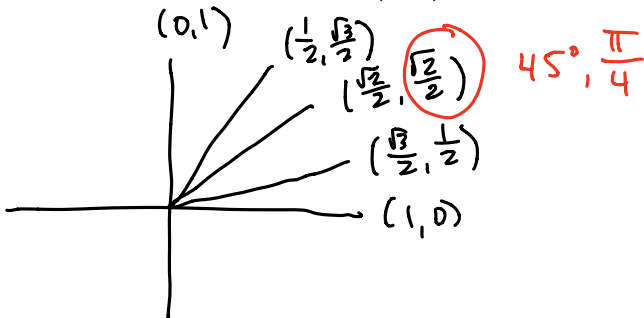
5. (1 pt.) Evaluate $\sin^{-1}(-0.0289)$ *in degrees* to four decimal places using a calculator.
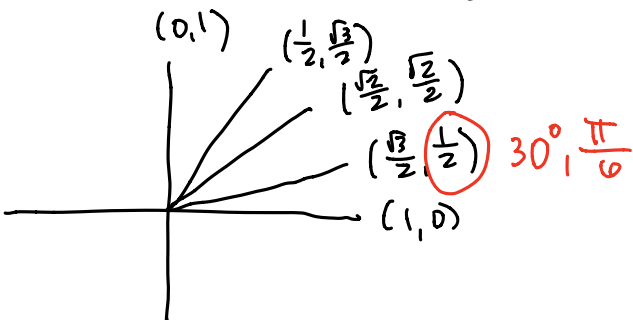
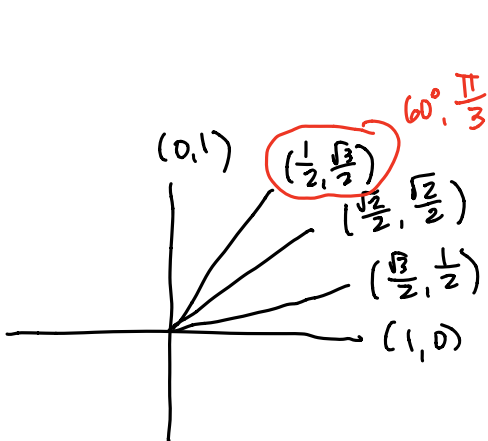$\boxed{-1.6561}$

6. (1 pt.) Find arcsin(0). = $\boxed{0}$

$\frac{\pi}{2}$ (0,1)

π (-1,0)

(1,0) ⟶ 0, 2π

(0,-1)

$\frac{3\pi}{2}$

7. (1 pt.) Find $\arcsin\left(\frac{\sqrt{2}}{2}\right)$. = $\boxed{45^\circ}$

(0,1) $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$

$\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$ 45°, $\frac{\pi}{4}$

$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$

(1,0)

8. (1 pt.) Find $\sin^{-1}\left(\frac{1}{2}\right)$. = $\boxed{30^\circ}$

(0,1) $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$

$\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$ 30°, $\frac{\pi}{6}$

(1,0)

9. (2 pts.) Find θ if $\theta = \arcsin\left(\tan\left(\frac{\pi}{3}\right)\right)$. $\boxed{DNE}$

↑
60°, $\frac{\pi}{3}$ find this first

(0,1) $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$

$\Rightarrow \tan\left(\frac{\pi}{3}\right) = \frac{\left(\frac{\sqrt{3}}{2}\right)}{\left(\frac{1}{2}\right)} = \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \sqrt{3}$

$\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$

(1,0)

$\theta = \arcsin(\sqrt{3})$

↑ $\sqrt{3} \approx 1.7321$ not in $[-1,1]$