Quiz #2 Math 101 -152

Name:	I.D.

Use the given graph of $f(x) = \sqrt{x}$ to find a number δ such that

if $|x-4| < \delta$ then $|\sqrt{x}-2| < 0.4$

Method 1

$-0.4 < \sqrt{x} - 2 < 0.4$

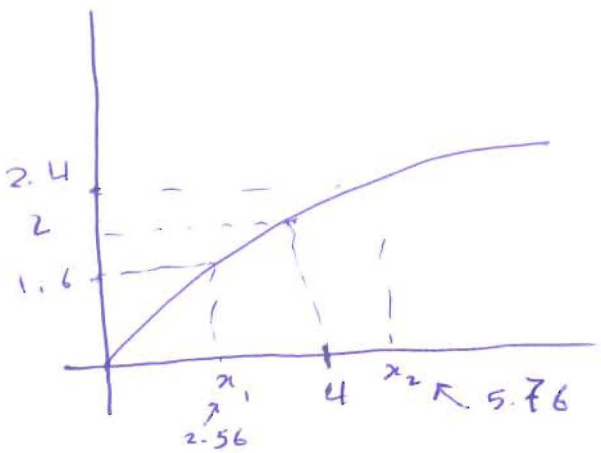
$\Rightarrow \quad 1.6 < \sqrt{x} < 2.4$

$(1.6)^2 < x < (2.4)^2$

$(1.6)^2 - 4 < x - 4 < (2.4)^2 - 4$

$-1.44 < x - 4 < 1.76$

$\delta \leq 1.44$



$x_1 \Rightarrow \sqrt{x_1} = 1.6 \Rightarrow x_1 = 2.56$

$x_2 \Rightarrow \sqrt{x_2} = 2.4 \Rightarrow x_2 = 5.76$

~~$\delta = \min\{5.76$~~

$\delta \leq \min\{5.76 - 4 \, , \, 4 - 2.56\}$

$\leq \min\{1.76 \, , \, 1.44\} = 1.44$