HW Given $y = 10 + \sqrt{x}$,

a) Find the derivative $f'(x)$.

b) Fill in the table

Point	X	Y	$f'(x)$
	0	10	0
A	1	11	$\frac{1}{2}$
B	2	11.414	$\frac{\sqrt{2}}{4} = 0.35$
C	3	11.732	$\frac{\sqrt{3}}{6} = 0.29$

c) Does the slope increase as x increase?

d) Approximate the change in Y when $\Delta x = 0.2$ at $x_1 = 3$. Is the approximation under- or over-estimate?

$\frac{1}{2\sqrt{x}}$

$\sqrt{x} = \frac{1}{2\sqrt{x}}$

a) $f'(x) = \frac{1}{2\sqrt{x}}$

C) No

D) $\Delta Y = f'(x) \cdot \Delta x$ (3)

$= \frac{\sqrt{3}}{6} \cdot (0.2) = 0.0577$ $\Delta Y = 0.0577$

$F(x+\Delta x) - F(x)$

$f(3.2) - 10 + \sqrt{3}$

$10 + \sqrt{3.2} - 10 + \sqrt{3}$

$= 0.0568$ $\Delta Y = 0.0568$

Pawit Sawaengsat

6304640995