Mathematics 122 Quiz 15 Name: Key

For the function below, make table for the deerivative $f'(x)$ and the second derivative $f''(x)$.

Δx .5 .5 .5

x	0.0	0.5	1.0	1.5
$f(x)$	3.6	3.2	2.4	0.8

Δf −.4 −.8 −1.6

2 pts

Δx .5 .5

x	0.25	0.75	1.25
$f'(x)$	−.8	−1.6	−3.2

$\Delta f'$ −.8 −1.6

← approxamated by $\frac{\Delta f}{\Delta x}$

$f'(.25) \approx \frac{-.4}{.5} = -.8$

$f'(.75) \approx \frac{-.8}{.5} = -1.6$

$f'(1.25) \approx \frac{-1.6}{.5} \approx -3.2$

2 pts

x	0.5	1.0
$f''(x)$	-1.6	-3.2

← approxamated by $\frac{\Delta f}{\Delta x}$

$f''(.5) \approx \frac{-.8}{.5} = -1.6$

$f''(1.0) \approx \frac{-1.6}{.5} = -3.2$