Mathematics 122 Quiz 9 Name: Key

(1) Let $y = f(x)$ be given by the table:

2 pts

x	2.0	2.2	2.4	2.6
$f(x)$	4.8	4.6	4.2	3.6

Make a table for $f'(x)$

x	2.1	2.3	2.5
$f'(x)$	-1	-2	-3
	①	②	③

$f'(x) \approx \frac{\Delta f}{\Delta x}$

at ① $\frac{\Delta f}{\Delta x} = \frac{4.6-4.8}{2.2-2.0} = \frac{-.2}{.2} = -1$

at ② $\frac{\Delta f}{\Delta x} = \frac{4.2-4.6}{2.4-2.2} = \frac{-.4}{.2} = -2$

at ③ $\frac{\Delta f}{\Delta x} = \frac{3.6-4.2}{2.6-2.4} = \frac{-.6}{.2} = -3$

(2) Let $y = g(x)$ be a with

- $g'(x) > 0$ for $1 < x < 4$ hence g is increasing
- $g'(x) < 0$ for $x < 1$ and $4 < x$ hence g is decreasing

3 pts

Draw a possible graph for $y = g(x)$.