Mathematics 122 Quiz 9 Name: Key

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

x	1.0	1.2	1.4	1.6
$f(x)$	3.1	3.8	4.6	5.6

2 pts

Make a table for $f'(x)$

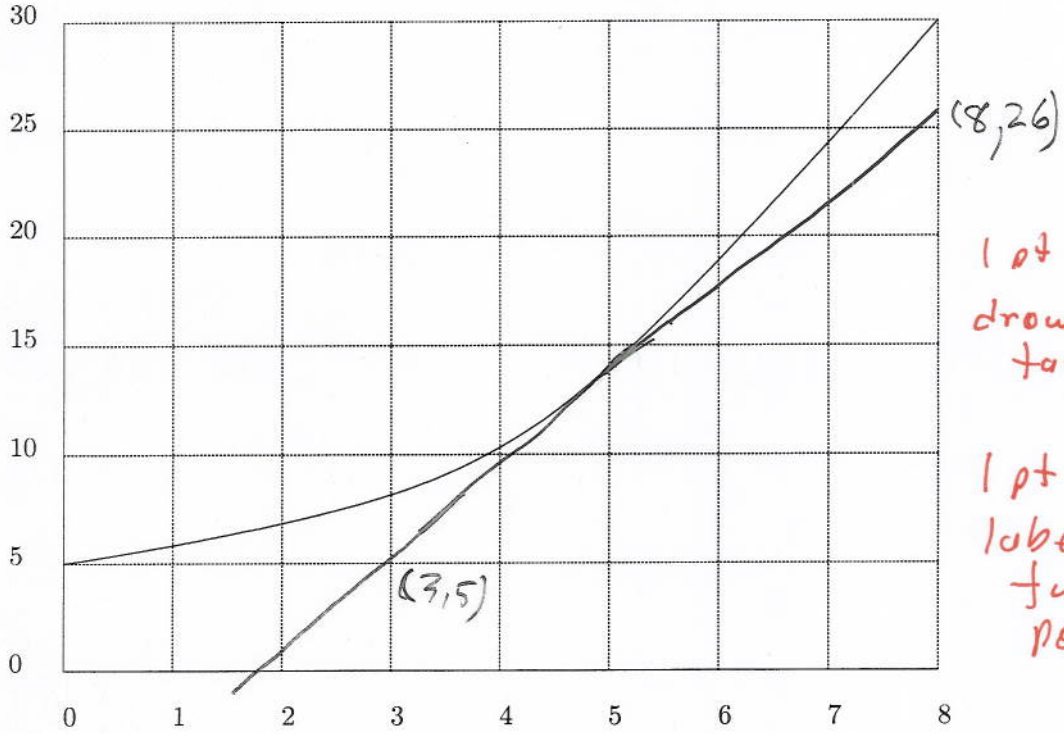
x	1.1	1.3	1.5
$f'(x)$	3.5	4.0	5.0

for 1.1 $\frac{\Delta f}{\Delta x} = \frac{3.8-3.1}{1.2-1.0} = 3.5$

for 1.3 $\frac{\Delta f}{\Delta x} = \frac{4.6-3.8}{1.4-1.2} = 4.0$ for 1.5 $\frac{\Delta f}{\Delta x} = \frac{5.6-4.6}{1.6-1.4} = 5$

(2) The for the function with the following graph:

3 pts



1 pt for drawing tangent

1 pt for labeling two points

draw the tangent line at the point where $x = 5$, label two points on this line and use them to estimate $f'(5)$

$f'(5)$ = slope of tangent line $= \frac{\Delta y}{\Delta x} = \frac{26-5}{8-3}$

$= \frac{19}{5} = 3.8$

$f'(5) \approx$ 3.8

1 pt for using the labeled pts to find $f'(5)$.