

Quiz #10

Name: Key

*You must show your work to get full credit.*

(1) A function satisfies  $f(20) = 5$ , and  $f'(20) = .3$

(a) Estimate  $f(20.5)$

$$f(20.5) \approx 5.15$$

$$f(20.5) \approx f(20) + f'(20) \Delta x = 5 + (.5)(.3) = 5.15$$

(b) Estimate  $f(19.8)$

$$f(19.8) \approx 4.95$$

$$f(19.8) \approx f(20) + f'(20) \Delta x$$

$$= 5 + .3(-.2) = 5 - .06 = 4.94$$

(2) A function  $g$  is given by the table

$t$	1.0	1.2	1.4	1.6
$g(t)$	5.2	5.4	5.8	6.4

(a) Make a table for  $g'(t)$ .

$t$	1.1	1.3	1.5
$g(t)$	1.0	2.0	3.0

Estimate  $g(1.26)$ .

$$g(1.26) \approx 5.52$$

$$g(1.26) \approx g(1.2) + g'(1.2) \Delta x$$

$$= 5.4 + (2.0)(.06)$$

$$= 5.4 + .12$$

$$= 5.52$$