Mathematics 122

Quiz #31 Name: Key

You must show your work to get full credit.

(1) A fraternity decides to make some money by selling guides to the bars of Five Points. Their fixed costs are \$250. The marginal cost of producing q of the guides is 2 pts

$$MC(q) = C'(q) = 2 + 3(.85)^q \text{ dollars/guide.}$$

What is the total cost of producing 500 of the guides.

Cost of producing 500 is \$1,268.46

$C(500) = C(0) + \int_0^{500} C'(q)\,dq$

$= 250 + \text{fnInt}(2+3(.85)^{\wedge}X, X, 0, 500)$

$=$

(2) The graph of the *derivative* $y = f'(x)$ of a function $f(x)$ is 3 pts.

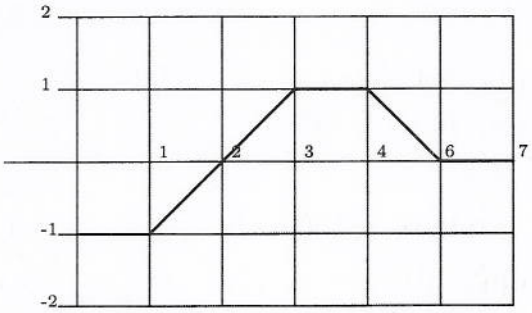

FIGURE 1. Graph of the derivative $y = f'(x)$

If $f(1) = 3$ then complete the following table:

Between $t=1$ & $t=2$
f changes by $-\frac{1}{2}$ box
$= -\frac{1}{2} \cdot .50$
$f(2) = 3 - .5 = 2.5$
$f(3) = 2.5 + .5 = 3.0$
$f(4) = 3.0 + 1.0 = 4.0$

x	1	2	3	4
$f(x)$	3	2.5	3	4