Mathematics 122

Quiz #32 Name: Key

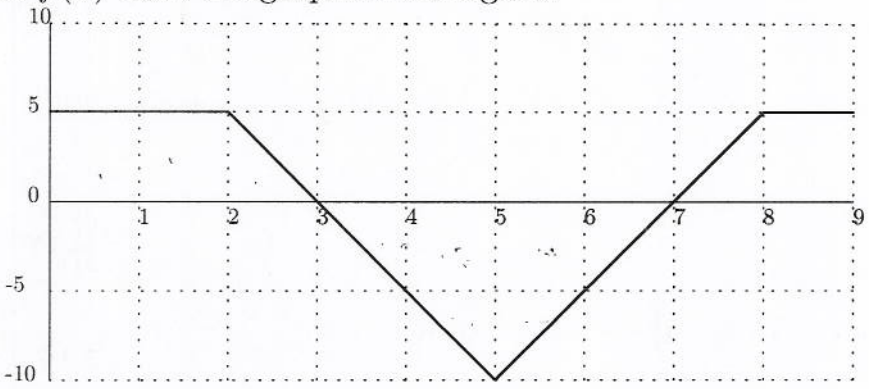
You must show your work to get full credit.

2 pts (1) If the speed of a bike is $v(t) = 10 - 3(.75)^t$ ft/sec where t is time in seconds, then what is the average speed between $t = 0$ and $t = 5$?

Average $= \frac{1}{5-0}\int_0^5 (10 - 3(.75)^t)\,dt$ Average speed 8.4092 Ft/sec

$= (1/5)\,fnInt(10-3(.75)\wedge X, X, 0, 5) =$ ↑

(2) Let $f(x)$ have the graph in the figure.



1 box = 5

1 pt (a) What is the average value of f between $x = 0$ and $x = 2$.

$\frac{1}{2-0}\int_0^2 f(x)\,dx$ Average = 5

$= \frac{1}{2}$ (2 boxes) $= \frac{1}{2}(2 \cdot 5) = 5$

1 pt (b) What is the average value of f between $x = 2$ and $x = 6$.

$\frac{1}{6-2}\int_2^6 f(x)\,dx = \frac{1}{4}$ (−3 boxes) Average = −3.75

$= \frac{1}{4}(-15) =$

1 pt (c) What is the average value of f between $x = 0$ and $x = 6$.

$\frac{1}{6-0}\int_0^6 f(x)\,dx$ Average = −.83333

$= \frac{1}{6}$ (2.5 − 3.5) boxes

$= \frac{1}{6}(-1)$ box $= \frac{1}{6}(-5) =$