232 Quiz 4 Name: *key*

February 24, 2012

Work individually. You may use your Notebooks.

1. (like #16 in 7.2) Explain why the sum $\sum_{k=1}^{100} f(2+0.1(k-1))(0.1)$ can't possibly be a Left Sum for f on $[a,b]=[2,5]$. Please be concise and to the point.

$n=100$, $a=2, b=5$ $\Rightarrow \Delta x = \frac{b-a}{n} = \frac{5-2}{100} = \frac{3}{100}$ is needed,

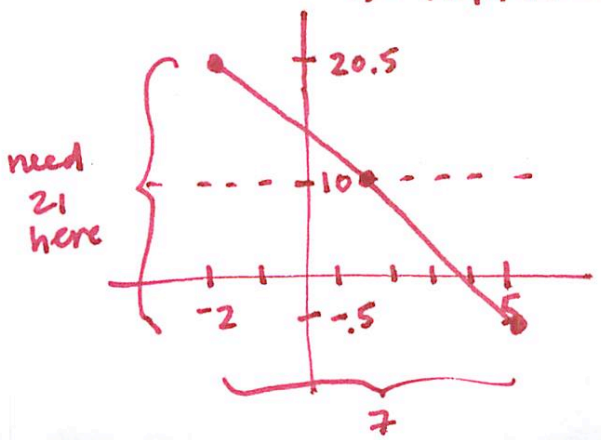
but 0.1 is playing the role of Δx in the given sum.

$\left(\sum_{k=1}^{n} f(a+\Delta x(k-1))\,\Delta x \text{ is Left Sum}\right)$ ✳

2. (like #19 in 7.4) Suppose f is a function whose average value on $[-2,5]$ is 10 and whose average rate of change on the same interval is -3. Sketch a possible graph for f. Illustrate the average value and the average rate of change graphically on your graph of f.

average value = 10 means average height is 10, or equivalently area under 10 is area under f.

AROC is -3 means slope from $(-2, f(-2))$ to $(5, f(5))$ is -3.



(you can be less specific)

(and there is more than 1 answer)

($f(x) = -3x + 14.5$ is my example)