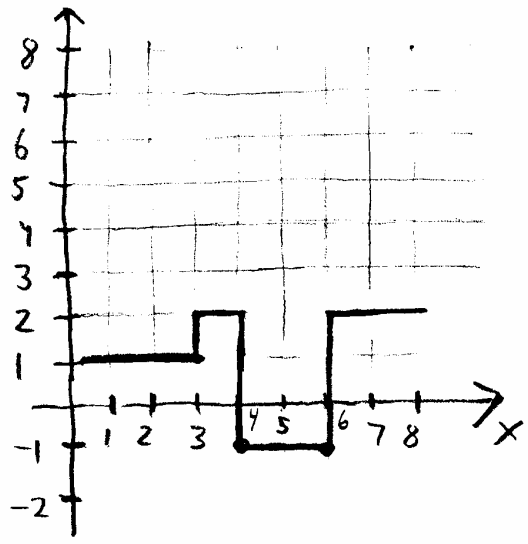
SHEET #510 : PREVIEW OF FUNDAMENTAL THEOREM.

NAME:_____ 1/8/08 v.1



X	CUMULATIVE NET AREA (FOR PART 2a)
0	
1	
2	
3	
4	
5	
6	
7	
8	

1. IF THE FUNCTION GIVEN ABOVE IS A DERIVATIVE, FIND X VALUES FOR THE UN-DIFFERENTIATED FUNCTION:

a) LOCAL MAXIMUM IN (0, 8) _____
LOCAL MINIMUM IN (0, 8) _____

b) ABSOLUTE MAX IN [0, 8] _____
ABSOLUTE MIN IN [0, 8] _____

c) INCREASING _____
DECREASING _____

2. USE THE GIVEN GRAPH TO CONSTRUCT THE "CUMULATIVE NET AREA." IT IS THE SUM OF ALL SQUARES TO ITS LEFT. NEGATIVE SQUARES COUNT AS NEGATIVE "AREAS"

a) FILL OUT TABLE ABOVE.

b) GRAPH ON SAME AXES. (YOU MAY DO (b) BEFORE (a).)

c) COMPARE THE ANSWERS IN QUESTION 1 AND QUESTION 2. MAKE A CONJECTURE ABOUT THEIR RELATIONSHIP.

3. LET THE CUMULATIVE NET AREA BE $N(X)$.

a) FOR $\Delta X = 8-7 = 1$,
FIND $\Delta N = N(8)-N(7)$ _____
COMPUTE $\Delta N/\Delta X =$ _____

b) FOR $\Delta X = 7.5-7 = 0.5$
FIND $\Delta N = N(7.5)-N(7)$ _____
COMPUTE $\Delta N/\Delta X =$ _____

c) FOR $\Delta X = 7.01-7 = 0.01$
FIND $\Delta N = N(7.01)-N(7)$ _____
COMPUTE $\Delta N/\Delta X$ _____

d) WHAT DO YOU THINK dN/dx IS AT $X=7$? _____

e) HOW IS THIS CONSISTENT WITH QUESTIONS 1 AND 2?