1.3 Rates of Change in Linear and Quadratic Functions

AP Precalculus

Name: _____

CA #1

What is the average rate of change for each function on the given intervals?

1. $y = 3x - 6$ on $-3 \leq x \leq 2$

2. $y = -8 - 2x$ on $5 \leq x \leq 7$

3. $y = x^2 + 3x - 5$ on $-2 \leq x \leq 4$

4. $y = 2x^2 - 6x + 4$ on $-3 \leq x \leq -2$

What is the rate of change of the average rates of change for each function over consecutive equal-length intervals?

5. $y = 21x - 1$

6. $y = 8 - x$

7. $f(x) = -x^2 + 3x - 7.$

8. $f(x) = 3x^2 + x - 1.$

The values of a function are given at selected x-values in the table below. The function's concavity does not change. Determine if the function is concave up or concave down. Justify your answer.

9.

x	4	7	10	13	16
$g(x)$	35	20	13	10	9

10.

x	-5	-3	-1	1	3
$h(x)$	100	95	80	50	10

Answers to 1.3 CA #1

1. 3	2. -2	3. 5	4. -16	5. 0	6. 0	7. -2
8. 6	9. Concave up because the rate of change is increasing over equal-length input-value intervals.			10. Concave down because the rate of change is decreasing over equal-length input-value intervals.		