1.3 Rates of Change in Linear and Quadratic Functions

AP Precalculus

Name: _____

CA #2

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

1. $y = 4x - 1$ on $-10 \leq x \leq -5$

2. $y = 8 - 3x$ on $-3 \leq x \leq 5$

3. $y = x^2 - 4x - 6$ on $-1 \leq x \leq 4$

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

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

5. $y = 5 + 8x$

6. $y = -3x + 10$

7. $f(x) = 5x - 4x^2$

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

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	-12	-7	-2	3	8
$g(x)$	-10	-12	-16	-22	-32

10.

x	1	2	3	4	5
$h(x)$	10	-10	-22	-27	-28

Answers to 1.3 CA #2

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