

Name: _____ Per: _____ Date: _____

Section 1.3 Rates of Change and Behaviors of Graphs!

Find the average rate of change of each function on the interval specified. Your answers will be expressions involving a parameter (b or h).

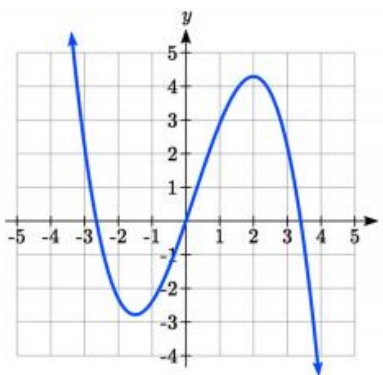
$$f(x) = 4x^2 - 7 \text{ on } [1, b]$$

$$h(x) = 3x + 4 \text{ on } [2, 2+h]$$

$$b(x) = \frac{1}{x+3} \text{ on } [1, 1+h]$$

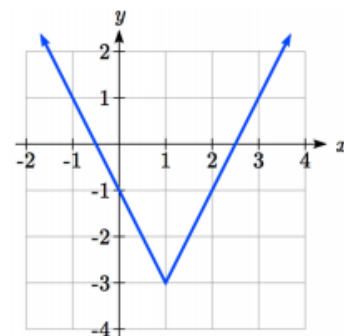
$$g(x) = 3x^2 - 2 \text{ on } [x, x+h]$$

For each function graphed, estimate the intervals on which the function is increasing and decreasing.



Increasing:

Decreasing:



Increasing:

Decreasing:

For each table below, select whether the table represents a function that is increasing or decreasing, and whether the function is concave up or concave down.

x	$f(x)$
1	2
2	4
3	8
4	16
5	32

Increasing Decreasing

Concave Up Concave Down

x	$g(x)$
1	90
2	80
3	75
4	72
5	70

Increasing Decreasing

Concave Up Concave Down

x	$f(x)$
1	-10
2	-25
3	-37
4	-47
5	-54

Increasing Decreasing

Concave Up Concave Down

x	$h(x)$
1	100
2	-50
3	-25
4	-10
5	0

Increasing Decreasing

Concave Up Concave Down

x	$k(x)$
1	-50
2	-100
3	-200
4	-400
5	-900

Increasing Decreasing

Concave Up Concave Down

x	$k(x)$
1	0
2	15
3	25
4	32
5	35

Increasing Decreasing

Concave Up Concave Down

For each function graphed, estimate the intervals on which the function is concave up and concave down, and the location of any inflection points.

