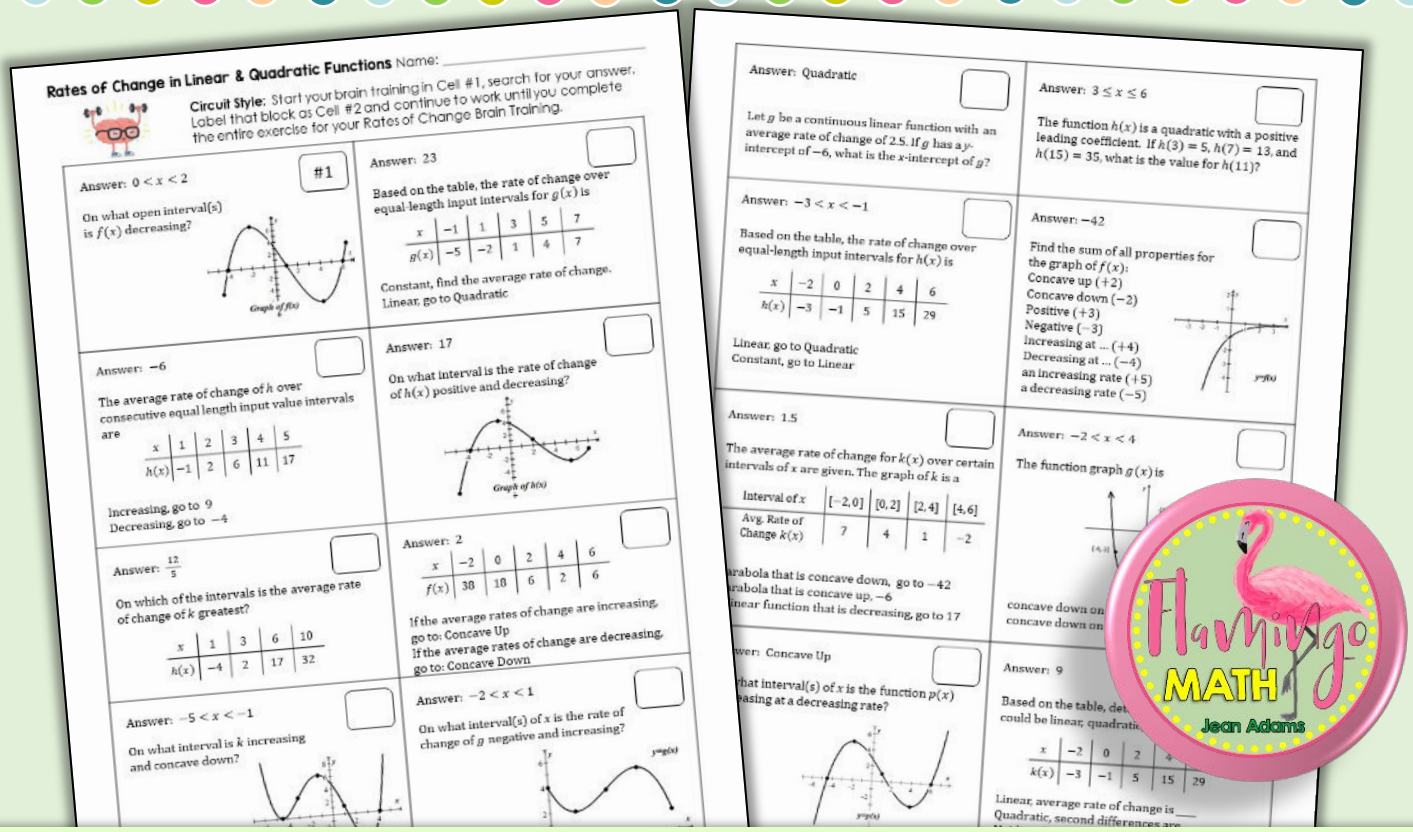
Rates of Change
Linear & Quadratic Functions



Circuit-Style Training

Preview

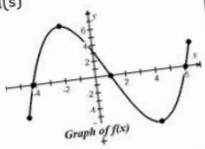
Rates of Change in Linear & Quad

Circuit Style: Start your brain training in Cell #1, [illegible]
Label that block as Cell #2 and continue to work until you complete the entire exercise for your Rates of Change Brain Training.

#1

Answer: $0 < x < 2$

On what open interval(s) is $f(x)$ decreasing?



Answer: 23

Based on the table, the rate of change over equal-length input intervals for $g(x)$ is

x	-1	1	3	5	7
$g(x)$	-5	-2	1	4	7

Constant, find the average rate of change.
Linear, go to Quadratic

Answer: -6

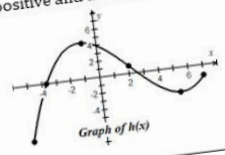
The average rate of change of h over consecutive equal length input value intervals are

x	1	2	3	4	5
$h(x)$	-1	2	6	11	17

Increasing, go to 9
Decreasing, go to -4

Answer: 17

On what interval is the rate of change of $h(x)$ positive and decreasing?



Answer: $\frac{12}{5}$

On which of the intervals is the average rate of change of k greatest?

x	1	3	6	10
$h(x)$	-4	2	17	32

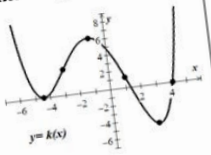
Answer: 2

x	-2	0	2	4	6
$f(x)$	38	18	6	2	6

If the average rates of change are increasing, go to: Concave Up
If the average rates of change are decreasing, go to: Concave Down

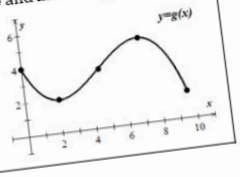
Answer: $-5 < x < -1$

On what interval is k increasing and concave down?



Answer: $-2 < x < 1$

On what interval(s) of x is the rate of change of g negative and increasing?



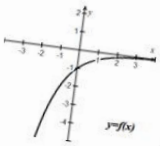
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Answer: $3 \le x \le 6$

The function $h(x)$ is a quadratic with a positive leading coefficient. If $h(3) = 5$, $h(7) = 13$, and $h(15) = 35$, what is the value for $h(11)$?

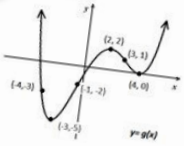
Answer: -42

Find the sum of all properties for
he graph of $f(x)$:
oncave up $(+2)$
ncave down (-2)
itive $(+3)$
ative (-3)
easing at ... $(+4)$
easing at ... (-4)
reasing rate $(+5)$
easing rate (-5)



$-2 < x < 4$

on graph $g(x)$ is



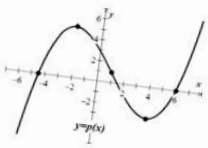
concave down on $-3 < x < 4$, go to 23
concave down on $-1 < x < 3$, go to 17

x	$[0,2]$	$[2,4]$	$[4,6]$
$k(x)$	7	4	1	-2

Parabola that is concave down, go to -42
Parabola that is concave up, -6
A linear function that is decreasing, go to 17

Answer: Concave Up

On what interval(s) of x is the function $p(x)$ decreasing at a decreasing rate?



Answer: 9

Based on the table, determine if the function could be linear, quadratic, or neither.

x	-2	0	2	4	6
$k(x)$	-3	-1	5	15	29

Linear, average rate of change is ___
Quadratic, second differences are ___
Neither, because ___

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