

Name: \_\_\_\_\_

Period: \_\_\_\_\_

**Checkpoint 5C***Integrated Math 2*

Sketch the parabola represented by the equation. Determine the vertex and label it on your sketch.

1)  $f(x) = -x^2 - 5x + 3$

2)  $h(x) = 3x^2 - 6x - 5$

Sketch the graph (or plot the points and connect them with a curve). Determine the y-intercept and label it on your sketch.

3)  $v(x) = 5^x - 2$

4)  $n(x) = 2x^2 - 5$

5) 

x	-2	-1	0	1	2	3
y	$4.\bar{1}$	$4.\bar{3}$	5	7	13	31

6) 

x	-1	0	1	2	3
y	9	6	5	6	9

Given the input values (x values), determine the output values (y values). For the tables, fill in the y values accordingly.

7)  $f(x) = -4x - 30$ ;  $x = -2$

8)  $g(x) = 2^{x-4}$ ;  $x = 2$

9)  $h(x) = x^2 - 3x + 18$ ;  $x = -7$

10)  $m(x) = -4(x - 1)(x + 2)$

x	-2	-1	0	1	2
y	0	8		0	

11)  $n(x) = 5^x$

x	-2	-1	0	1	2
y	-0.04		1	5	

12) Three vehicles leave a starting location at the same time. Each vehicle has an equation that represents the distance traveled where  $t$  is time in minutes and  $d$  is distance in miles.

- Fill in the chart with the range of distance (in miles) for the given interval of time (in minutes).
- Will the vehicles have traveled the same distance at any point of time? Explain why or why not.
- Over a long period of time, which vehicle travels the farthest? Which travels the shortest?

Vehicle	Equation for Distance ( $d$ = miles; $t$ minutes)
A	$d = 1.75^t - 1$
B	$d = 0.25t^2$
C	$d = 1.5t$

Time Interval (minutes)	Vehicle A	Vehicle B	Vehicle C
	Range of Distances (miles)	Range of Distances (miles)	Range of Distances (miles)
$0 \leq t \leq 1$			
$1 \leq t \leq 2$			
$2 \leq t \leq 3$			
$3 \leq t \leq 4$			