Algebra I

Exploring Vertex Form

Name: _____
Date: _____
Hour: _____

1) On your graphing calculator graph the function $f(x) = x^2$.

a. Identify the vertex. a) _____

b. Identify the line of symmetry. b) _____

c. Does the graph open up or down? c) _____

2) On your graphing calculator graph the function $f(x) = (x - 3)^2 + 4$

a. Identify the vertex. a) _____

b. Identify the line of symmetry. b) _____

c. Does the graph open up or down? c) _____

d. Did the graph move left or right when compared to $f(x) = x^2$? How far?
d) _____

e. Did the graph move up or down when compared to $f(x) = x^2$? How far?
e) _____

3) On your graphing calculator graph the function $f(x) = -(x + 2)^2 + 6$

a. Identify the vertex. a) _____

b. Identify the line of symmetry. b) _____

c. Does the graph open up or down? c) _____

d. Did the graph move left or right when compared to $f(x) = x^2$? How far?
d) _____

e. Did the graph move up or down when compared to $f(x) = x^2$? How far?
e) _____

4) On your graphing calculator graph the function $f(x) = 3(x+1)^2 - 2$.

a. Identify the vertex. a) _____

b. Identify the line of symmetry. b) _____

c. Does the graph open up or down? c) _____

d. Did the graph move left or right when compared to $f(x) = x^2$? How far?
d) _____

e. Did the graph move up or down when compared to $f(x) = x^2$? How far?
e) _____

5) On your graphing calculator graph the function $f(x) = -4(x-5)^2 + 1$

a. Identify the vertex. a) _____

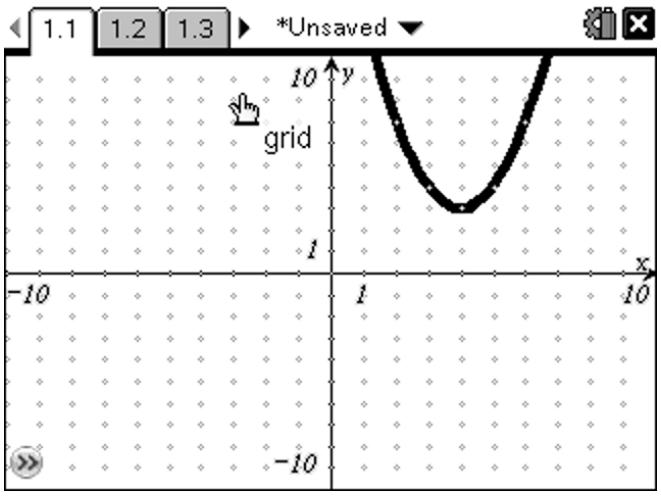
b. Identify the line of symmetry. b) _____

c. Does the graph open up or down? c) _____

d. Did the graph move left or right when compared to $f(x) = x^2$? How far?
d) _____

e. Did the graph move up or down when compared to $f(x) = x^2$? How far?
e) _____

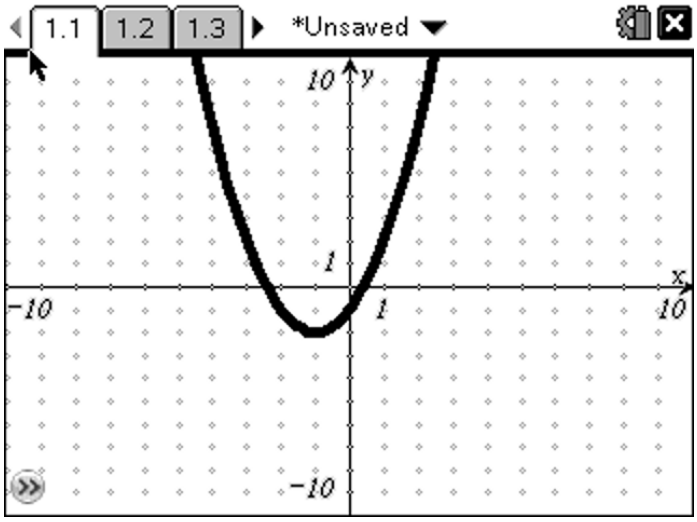
6) Given the graph and table below, write a function of this graph in vertex form, $f(x) = a(x-h)^2 + k$.



Input	output
0	19
1	12
2	7
3	4
4	3
5	4
6	7

6) _____

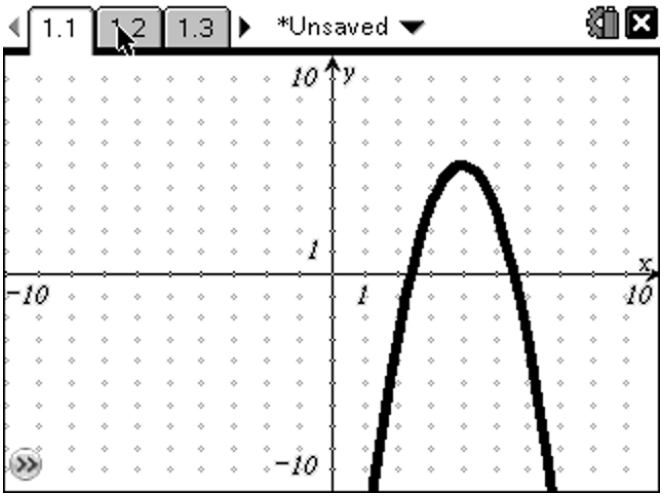
7) Given the graph and table below, write a function of this graph in vertex form, $f(x) = a(x - h)^2 + k$.



Input	Output
-4	7
-3	2
-2	-1
-1	-2
0	-1
1	2
2	7

7) _____

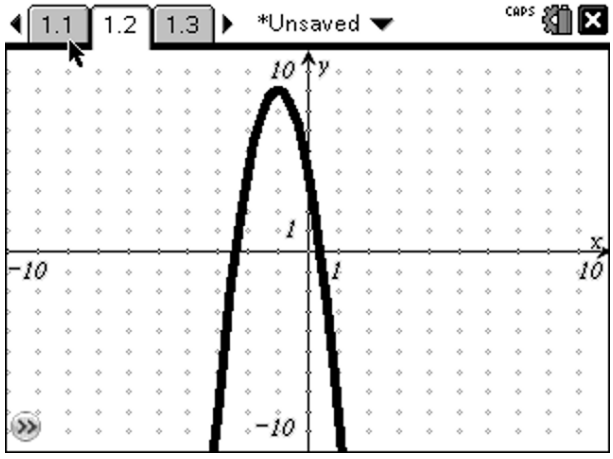
8) Given the graph and table below, write a function of this graph in vertex form, $f(x) = a(x - h)^2 + k$.



Input	Output
0	-27
1	-13
2	-3
3	3
4	5
5	3
6	-3

8) _____

9) Given the graph and table below, write a function of this graph in vertex form, $f(x) = a(x - h)^2 + k$.



Input	Output
-4	-28
-3	-8
-2	4
-1	8
0	4
1	-8
2	-28

9) _____