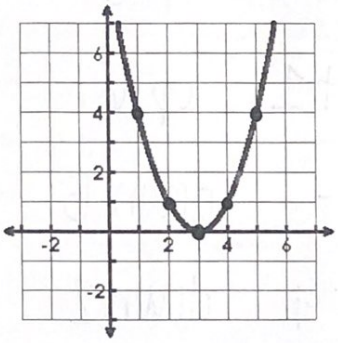
Describe in words the transformations and write an equation for each quadratic function.

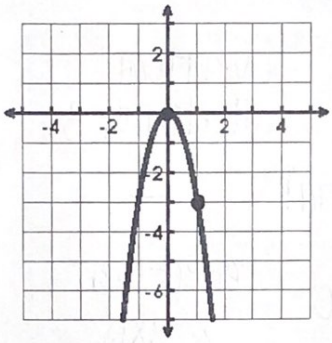
5. Vertex: (3,0)
- a: 1
- h: 3
- k: —

f(x) = $(x-3)^2$



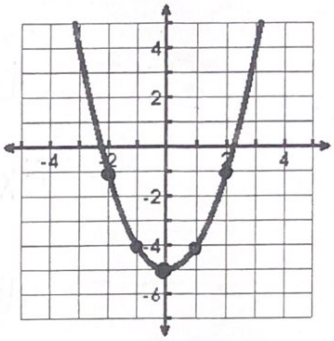
6. Vertex: (0,0)
- a: −3
- h: —
- k: —

f(x) = $-3x^2$



7. Vertex: (0,−5)
- a: 1
- h: —
- k: −5

f(x) = x^2-5



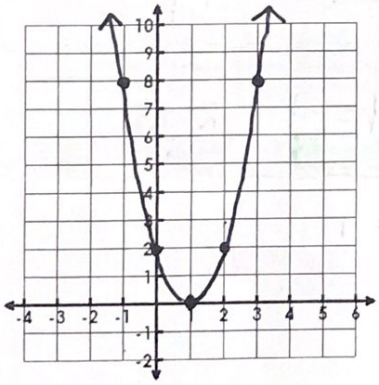
Graph the following equations Identify the vertex and the axis of symmetry.

8. $f(x)=2(x-1)^2+0$

Vertex: (1,0)

Axis of Symmetry: x = 1

Opens up or down? up

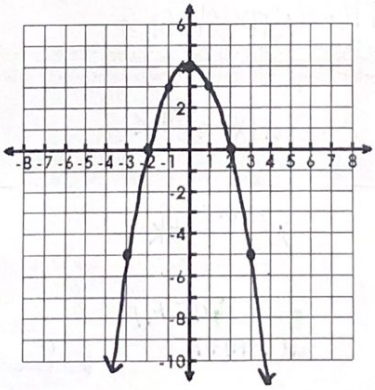


9. $f(x)=-x^2+4$

Vertex: (0,4)

Axis of Symmetry: x = 0

Opens up or down? down

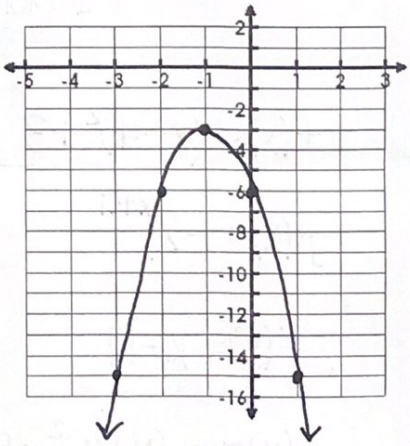


10. $f(x)=-3(x+1)^2-3$

Vertex: (−1,−3)

Axis of Symmetry: x = ___

Opens up or down? down



Algebra 1 Name_____ ID: 1

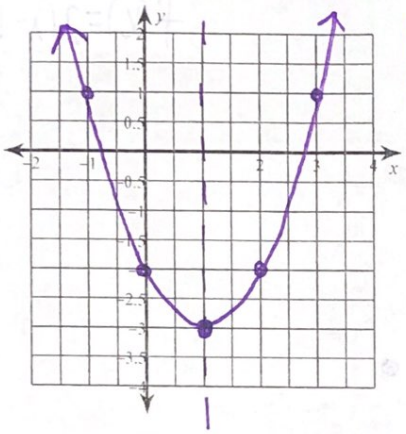
5.2 - Graphing in Vertex Form

Date_____ Period____

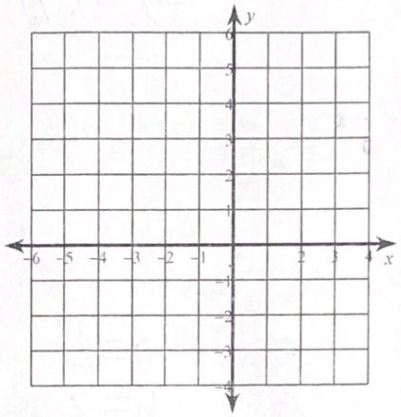
Identify a, h, and k. Then sketch the graph of each function.

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

a=1
h=1
k=-3

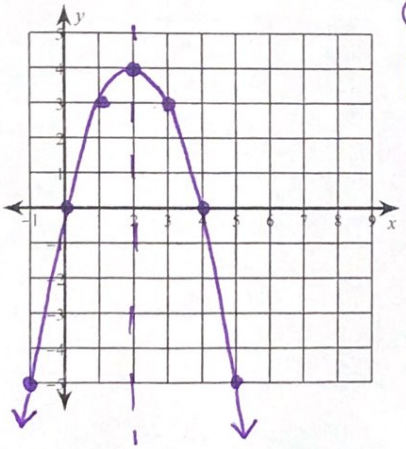


2) $f(x) = 2(x+1)^2 - 3$

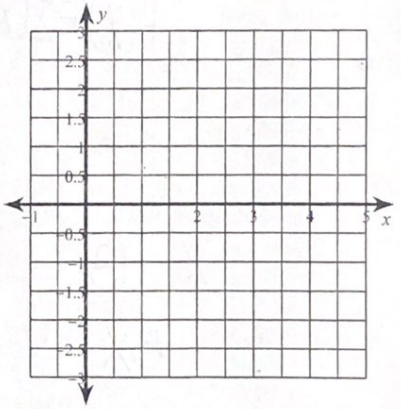


3) $f(x) = -2(x-2)^2 + 4$

a=-2
h=2
k=4

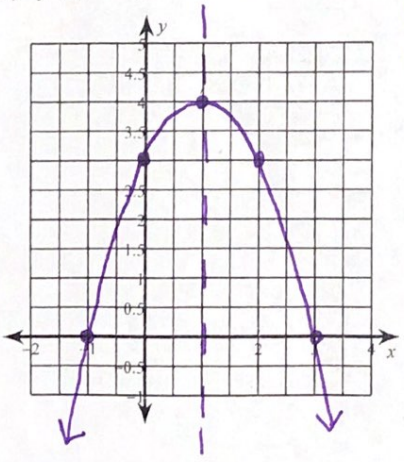


4) $f(x) = (x-2)^2 - 2$

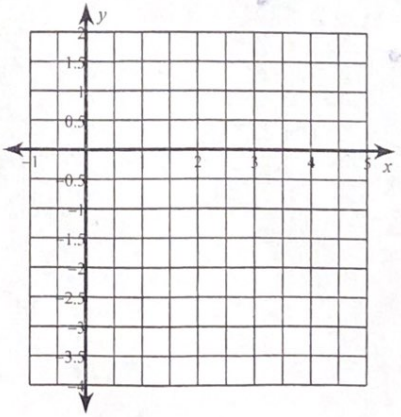


5) $f(x) = -(x-1)^2 + 4$

a=-1
h=1
k=4

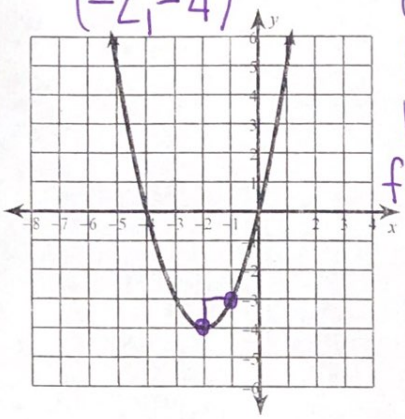


6) $f(x) = (x-2)^2 - 3$



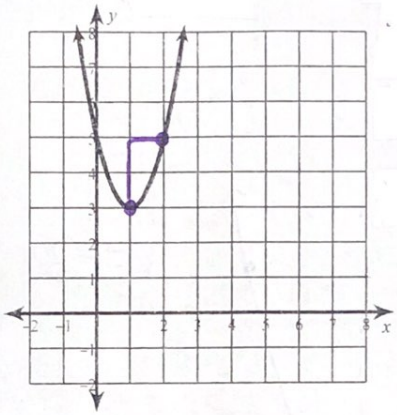
Identify the vertex, then write an equation in vertex form for the given graph.

7) $(-2,-4)$

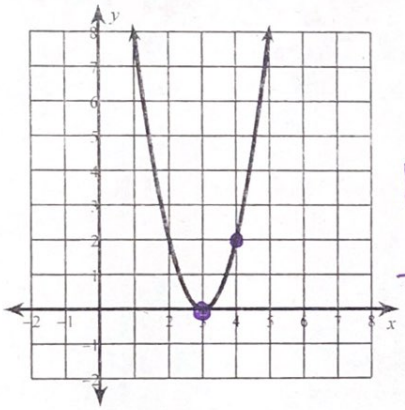


$a=1$
$h=-2$
$k=-4$
$f(x)=(x+2)^2-4$

8)

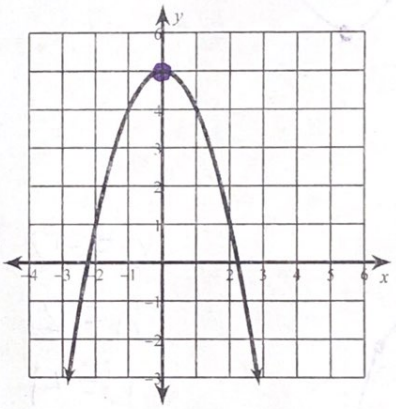


9)



$a=2$
$h=3$
$k=0$
$f(x)=2(x-3)^2$

10)



Review: Write each as an algebraic expression.

11) a number decreased by 13 $x-13$

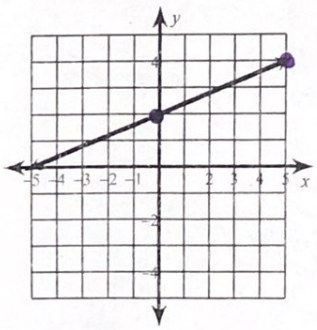
12) the quotient of 25 and a number

13) the product of 5 and a number $5x$

14) 6 more than a number

Review: Write the slope-intercept form of the equation of each line.

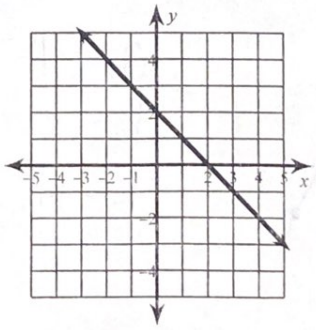
15)



A) $y=-\frac{2}{5}x+2$ B) $y=\frac{1}{5}x+2$

C) $y=\frac{2}{5}x+2$ D) $y=2x+\frac{2}{5}$

16)



A) $y=2x-1$ B) $y=x+2$

C) $y=-x+2$ D) $y=2x+2$