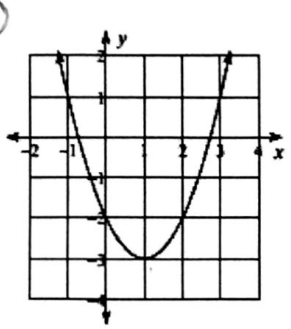
Lesson 1-6

HW22 – *Unit 10 Quiz Review* Name Key Per____

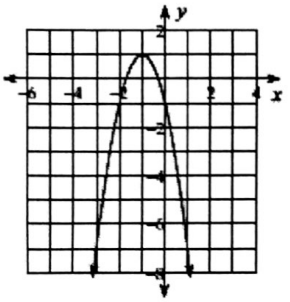
Select the correct graph for each of the following equations.

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

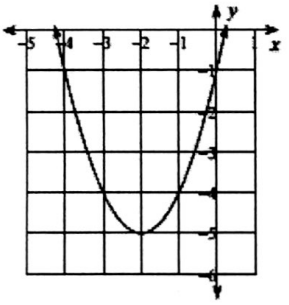
A)



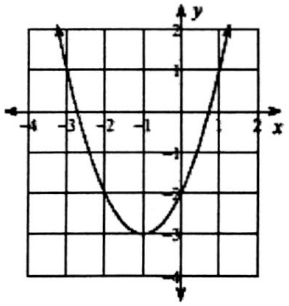
B)



C)

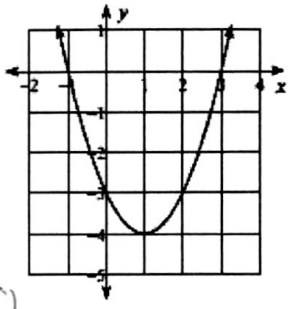


D)

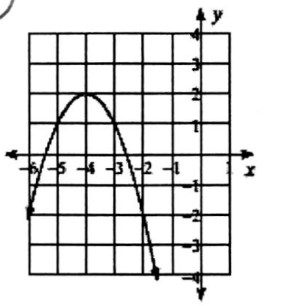


2) $f(x)=-(x+4)^2+2$ (-4,2)

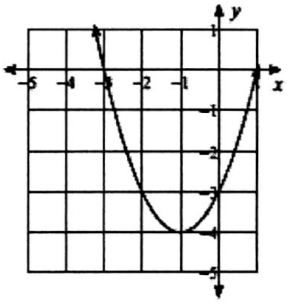
A)



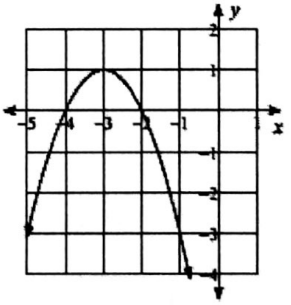
B)



C)



D)



3. What is the domain of the graph in #1? $(-\infty,\infty)$	4. What is the range of the graph in #2? $(-\infty, 2]$
5. On which interval is the graph in #1 increasing? $(1,\infty)$	6. On which interval is the graph in #2 decreasing? $(-4,\infty)$
7. What is the axis of symmetry in #1? $x=1$	8. What is the vertex in #2? $(-4,2)$

Given the quadratic function shown in the table to the right, answer the following.

x	f(x)
1	6
2	3
3	2
4	3
5	6
6	11
7	18

vertex →

. Vertex (3,2)

0. Axis of Symmetry $x=3$

1. f(2) = 3

2. f(5) = 6

3. f(0) = 11 (symmetry)

4. Is this parabola concave up or concave down?

Concave up.

15. Based on the end behavior, would the leading coefficient be positive or negative?

positive, $a>0$

Identify the vertex and the axis of symmetry for each of the following.

16. $y=x^2-2.3$

(0, -2.3)

$x=0$

17. $y=\left(x+\frac{1}{2}\right)^2+3$

$(-\frac{1}{2}, 3)$

$x=-\frac{1}{2}$

18. $y=-(x-5)^2$

(5, 0)

$x=5$

For each of the following, state the y-intercept, axis of symmetry, and whether it is concave up or down.

19. $y=-2x^2+12x-9$

y-intercept: $-9 \rightarrow (0,-9)$

$h=\frac{-b}{2a}=\frac{-12}{2(-2)}=\frac{-12}{-4}=3$

axis of sym: $x=3$

Concave down.

20. $y=x^2+10x+21$

y-intercept: $21 \rightarrow (0,21)$

$h=\frac{-b}{2a}=\frac{-10}{2(1)}=\frac{-10}{2}=-5$

axis of sym: $x=-5$

Concave up.

For each of the following, convert the equation from vertex form to standard form.

21. $y=(x+4)^2-9$	22. $y=-(x-1)^2-4$
$y=(x+4)(x+4)-9$ $y=x^2+8x+16-9$ $y=x^2+8x+7$	$y=-(x-1)^2-4$ $y=-(x^2-2x+1)-4$ $y=-x^2+2x-1-4$ $y=-x^2+2x-5$

Answer Key

1. a	2. b	3. $(-\infty,\infty)$	4. $(-\infty,2]$
5. $(1,\infty)$	6. $(-4,\infty)$	7. x = 1	8. (-4,2)
9. (3,2)	10. x = 3	11. 3	12. 6
13. 11	14. concave up	15. positive	16. (0,-2.3) x = 0
17. $\left(-\frac{1}{2},3\right)$ $x=-\frac{1}{2}$	18. (5,0) x = 5	19. y-int: -9 Axis of symm: x = 3 Concave down	20. y-int: 21 Axis of symm: x = -5 Concave up
21. $y=x^2+8x+7$	22. $y=-x^2+2x-5$		