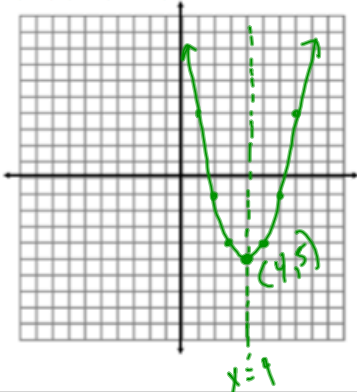


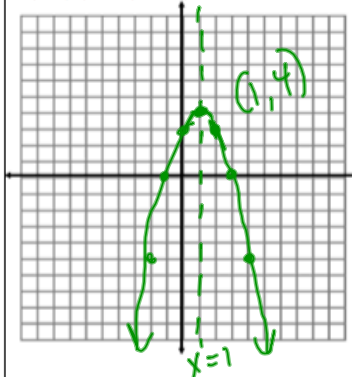
5.1 Practice Solutions

Directions: Graph. Label the vertex and axis of symmetry. Graph with a table or using 1-3-5 shortcut.

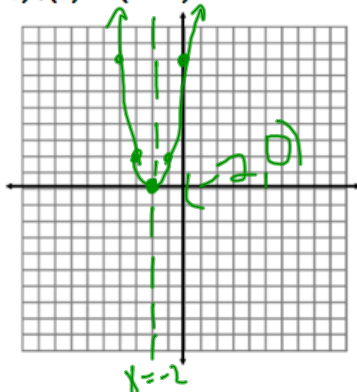
1) $f(x) = (x - 4)^2 - 5$



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

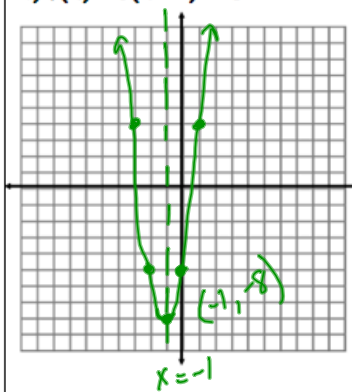


3) $f(x) = 2(x + 2)^2$



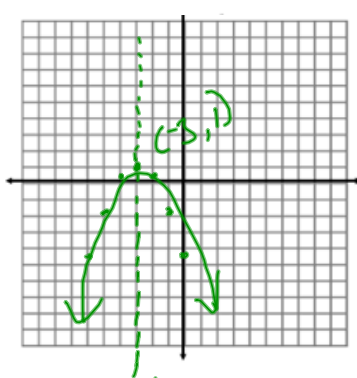
1 → 2
3 → 6
5 → 10

4) $f(x) = 3(x + 1)^2 - 8$



1 → 3
3 → 9
5 → 15

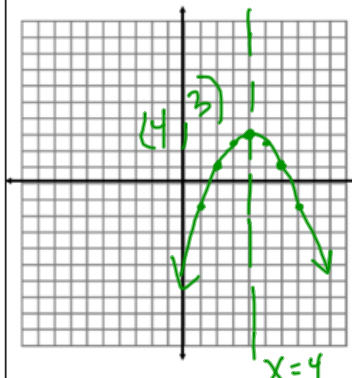
5) $f(x) = -.7(x + 3)^2 + 1$



MAKE TABLE
OF VALUES
AROUND VERTEX

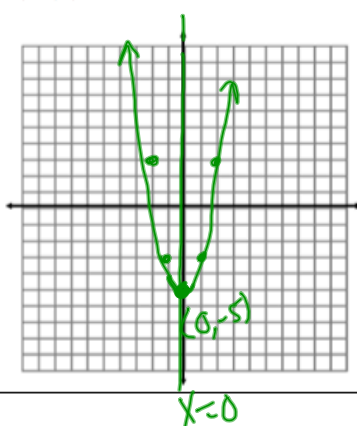
-2	1.3
-1	-1.8
0	-5.3

6) $f(x) = -\frac{1}{2}(x - 4)^2 + 3$



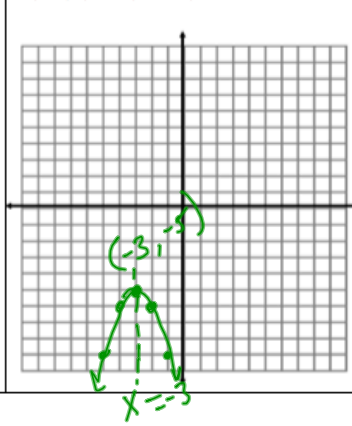
1 → -1/2
3 → -3/2
5 → -5/2

7) $f(x) = 2x^2 - 5$

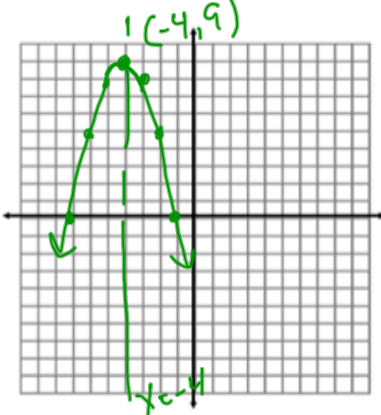


1 → 2
3 → 6
5 → 10

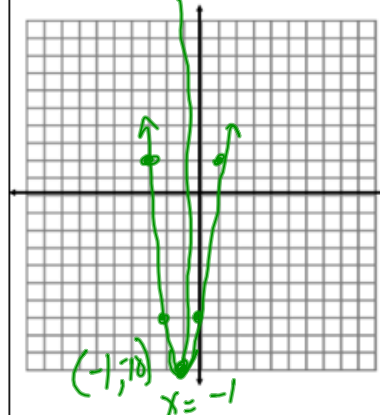
8) $f(x) = -(x + 3)^2 - 5$



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



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



1 → 3
3 → 9
5 → 15

Directions: Tell whether each function has a minimum value or a maximum value. Find the minimum or maximum value.

11) $y = -2.5(x - 4.75)^2 - 5.25$

maximum
value is
-5.25

12) $f(x) = -12(x + 17.6)^2 - 15.8$

maximum
value is -15.8

13) $y = 109(x - 345)^2 - 565$

minimum
value is
-565

Directions: Describe and correct the error in analyzing the graph of $f(x) = -4(x + 18)^2 - 15$

14) The graph will have a minimum value of 18.

Since a is negative it
will have a maximum
at the y-value of -15.

15) The graph will be wider in comparison to the parent function because $|a| > 1$.

When $|a| > 1$ the graph
will be narrower
than the parent function.