

**PRACTICE ON YOUR OWN (put in your notes)**

**Evaluate the following using:**

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

$$\text{a) } f(-6) = 2(-6)^2 - 2(-6) - 3 = \boxed{81}$$

$$\begin{aligned} \text{b) } f(a-2) &= 2(a-2)^2 - 2(a-2) - 3 \\ &= 2(a-2)(a-2) - 2a + 4 - 3 \\ &= 2(a^2 - 2a - 2a + 4) - 2a + 1 \\ &= \boxed{2a^2 - 10a + 9} \end{aligned}$$

**YOUR SIGNED INFO SHEET  
IS DUE TOMORROW!!!**

## 1-5 Parent Functions

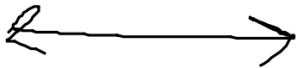
What is a parent function?

The most basic graph in a FAMILY OF graphs.

Graph the following parent functions

Constant

$$y = 2$$



Identity

$$y = 1x$$



Quadratic

$$y = x^2$$



Cubic<sub>3</sub>

$$y = x^3$$



Square Root

$$y = \sqrt{x}$$



Absolute Value

$$y = |x|$$

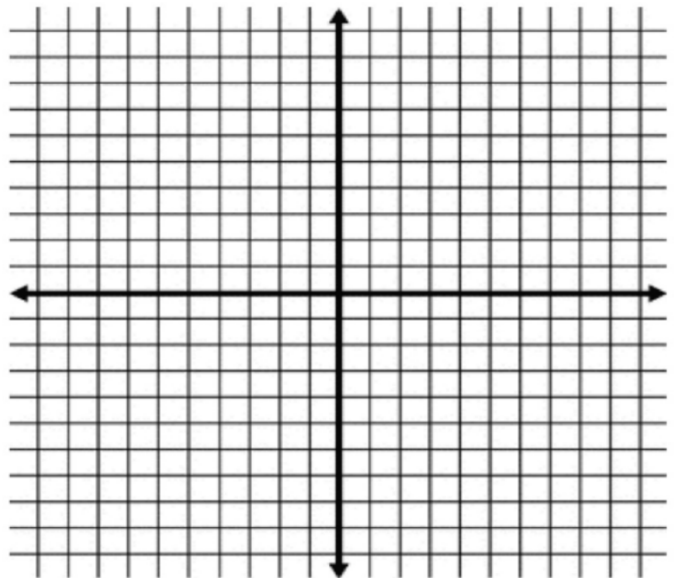
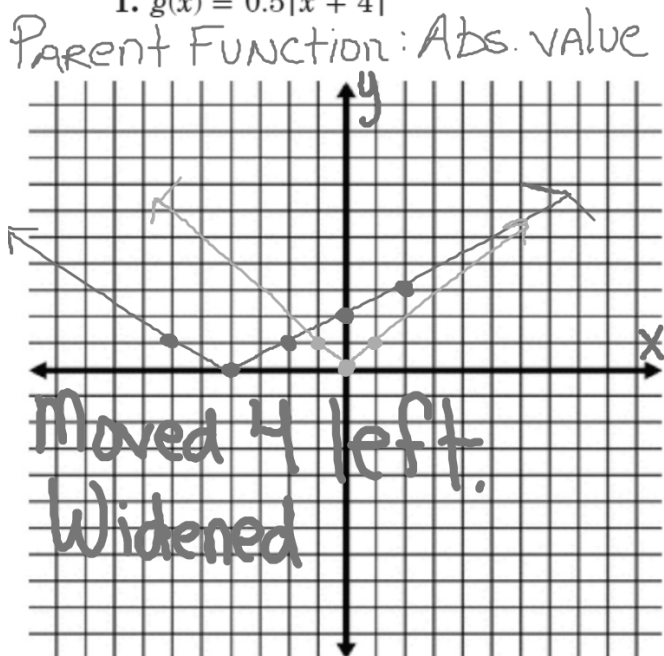


## Exercises

Identify the parent function  $f(x)$  of  $g(x)$ , and describe how the graphs of  $g(x)$  and  $f(x)$  are related. Then graph  $f(x)$  and  $g(x)$  on the same axes.

1.  $g(x) = 0.5|x + 4|$

2.  $g(x) = 2x^2 - 4$



**CLASSWORK/HOMEWORK:** In each of the following, identify the parent graph and then graph both functions.

①  $g(x) = 3 - 2x^3$

②  $g(x) = \sqrt{x+4} - 3$

③  $g(x) = -\frac{1}{4}(x+2)^2 - 2$

④  $g(x) = 6 - |x+5|$

## **Exit Ticket:**

**Find each product.**

1)  $(3n + 2)(n + 3)$

**Evaluate each using the values given.**

2)  $8(x - y)$ ; use  $x = 5$ , and  $y = 2$