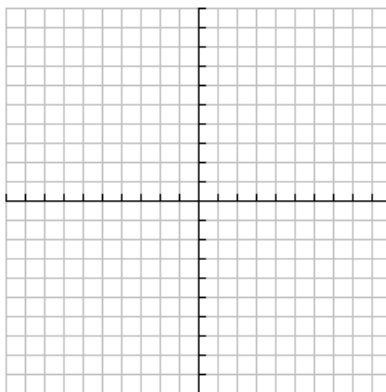
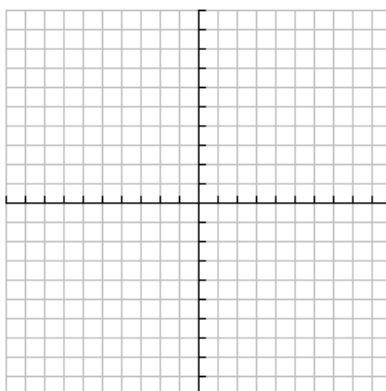


Name: \_\_\_\_\_

1) Graph  $y = x^2$

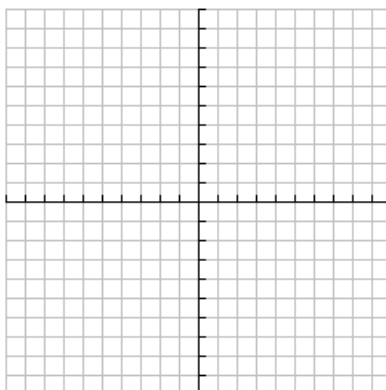


2) Graph  $y = x^2 + 1$



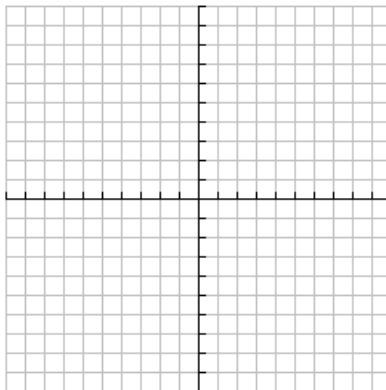
a) What changed between  $y = x^2$  and  $y = x^2 + 1$ ?

3) Graph  $y = (x + 3)^2$



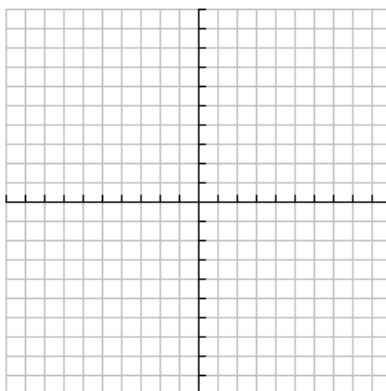
a) What changed between  $y = x^2$  and  $y = (x + 3)^2$ ?

4) Graph  $y = 2x^2$



a) What changed between  $y = x^2$  and  $y = 2x^2$ ?

5) Graph  $y = \frac{1}{2}x^2$



a) What changed between  $y = x^2$  and  $y = \frac{1}{2}x^2$ ?

6) Our most basic quadratic function, or **parent function**, is  $f(x) = x^2$ . In graphs 2-5, we **transformed** our graphs. Using the formula  $f(x) = a(x - h)^2 + k$ , answer the following questions:

a) What do you think happens when we change  $k$ ?

b) What do you think happens when we change  $h$ ?

c) What do you think happens when  $a$  gets bigger?

d) What do you think happens when  $a$  gets smaller?

e) What do you think happens when  $a$  is negative?