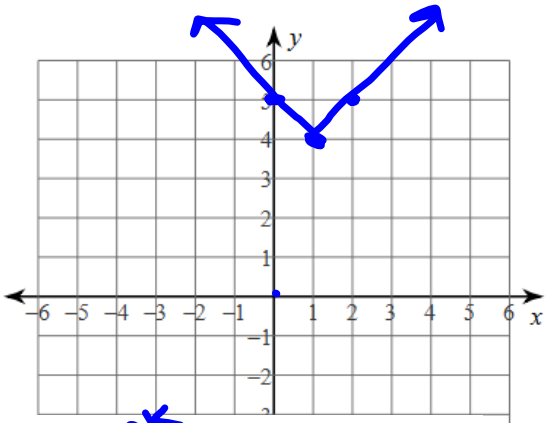
Graph using transformation rules:

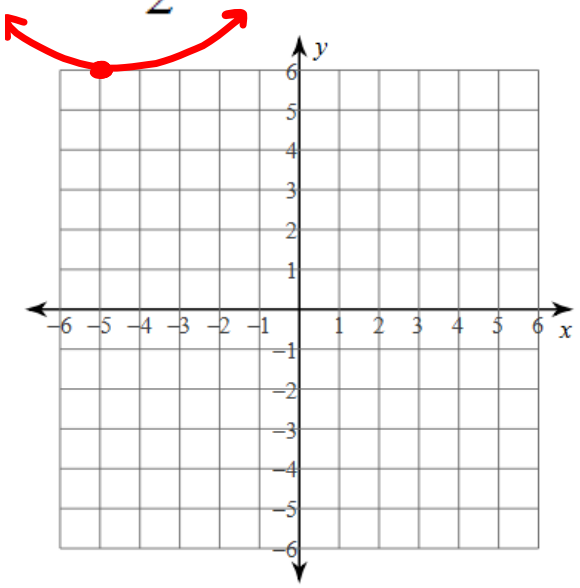
$$y = |x - 1| + 4$$

Rt 1 Up 4



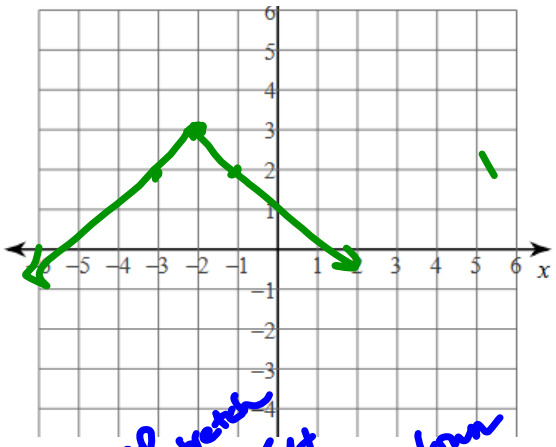
$$y = \frac{1}{2}(x + 5)^2 + 6$$

Shrink Left Up



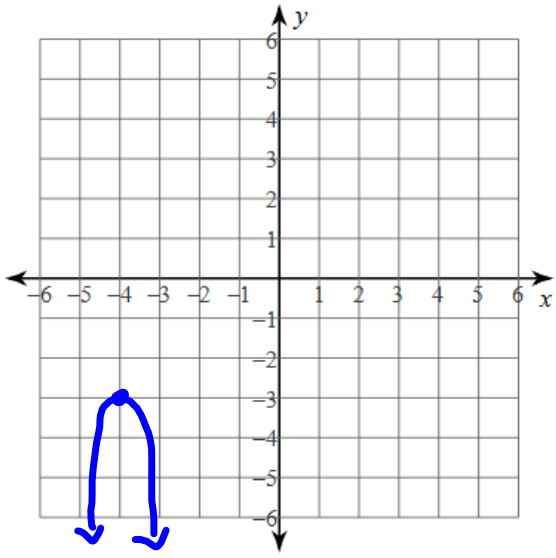
$$y = -|x + 2| + 3$$

Flip Left Up



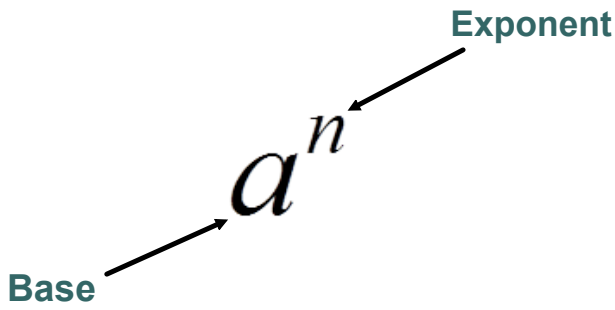
$$y = -2(x + 4)^2 - 3$$

Flip Shrink Left down



Exponent Laws

Power of a



Definition:

a^n = a x a x a x ….a, (n times)

$2^4 = 2 \cdot 2 \cdot 2 \cdot 2$

$x^5 = x \cdot x \cdot x \cdot x \cdot x$

$x^5 = x \cdot x \cdot x \cdot x \cdot x$

$x^2 \cdot x^2 \cdot x$

$x^5 = x \cdot x \cdot x \cdot x \cdot x$

$x \cdot x^4$

$x^5 = x \cdot x \cdot x \cdot x \cdot x$

$x^3 \cdot x^2$

Let's think about place value…

Position Name	Thousands	Hundreds	Tens	Units
Decimal Form	1000	100	10	1
Power of 10	10^3	10^2	10^1	10^0

$$a^0 = 1$$

- If a is nonzero.
- Thus,

$$6^0 = 1$$

$$23^0 = 1$$

$$(2ab)^0 = 1$$

$$\left[\frac{2ab^2x^4}{4y^5}\right]^0 = 1$$

Let's explore.....

$2^3 * 2^2 = 2^{3+2} = 2^5$

$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

2^5

$x^5 \cdot x^{10}$

x^{5+10}

x^{15}

$4xy^2 \cdot 2x^3y$

$8x^{1+3}y^{2+1}$

$8x^4y^3$

$3x^2y^3z \cdot 4xy^5$

$12x^3y^8z$

$3x^0y^4$

$3 \cdot 1 \cdot y^4$

$3y^4$

$3x^2y^0 \cdot 2xy$

$6x^3y$