

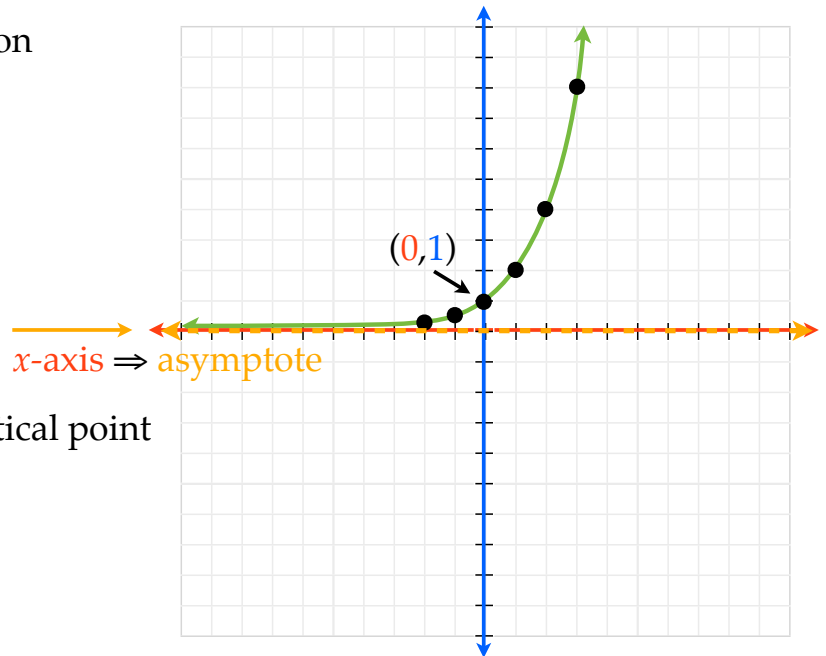
The Exponential Parent Function

$$y = 1 \cdot 2^x$$

$$a = 1 \quad b = 2$$

x	y
-2	0.25
-1	0.5
0	1
1	2
2	4
3	8

$x = 0 \Rightarrow$ critical point



Exponential Equation

$|a|$ stretches or compresses graph
if $a < 0$, reflection over horizontal asymptote

h gives the horizontal translation
 $h > 0$ shifts right; $h < 0$ shifts left

$$y = a \cdot b^{(x - h)} + k$$

base of exponential equation
 $b > 1$ creates exponential growth

k gives the vertical translation
 $k > 0$ shifts up; $k < 0$ shifts down

Exponential Equation

$$y = a \cdot b^{(x-h)} + k$$

Given exponential equation, label a , b , h , and k .

$$y = 2 \cdot 2^{(x-3)} - 4$$

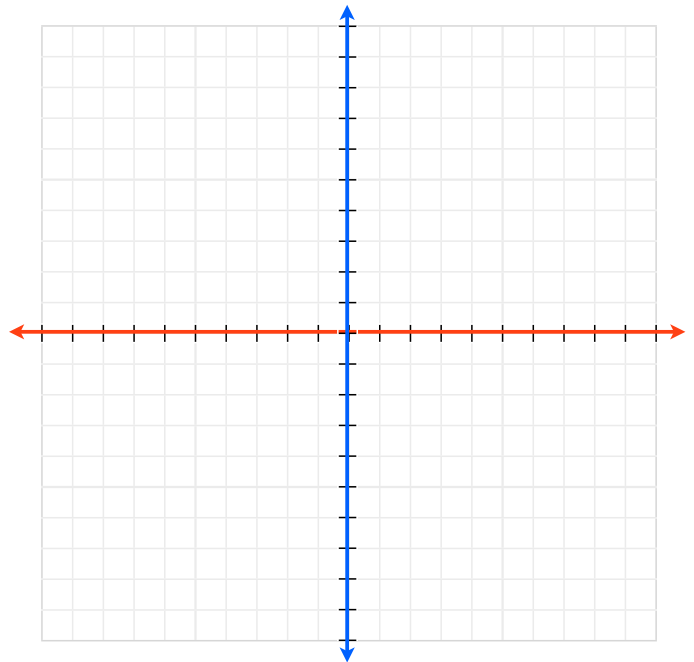
$$y = 3^{(x+1)}$$

$$y = -1 \cdot 2^x + 3$$

$$y = 4^{(x-1)} + 2$$

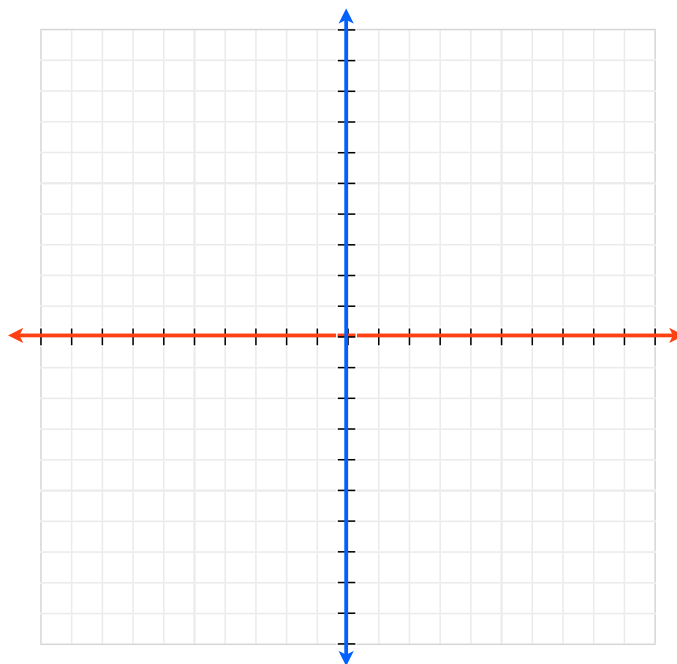
Graph the following exponential equation

$$y = 2^{(x-2)} - 5$$



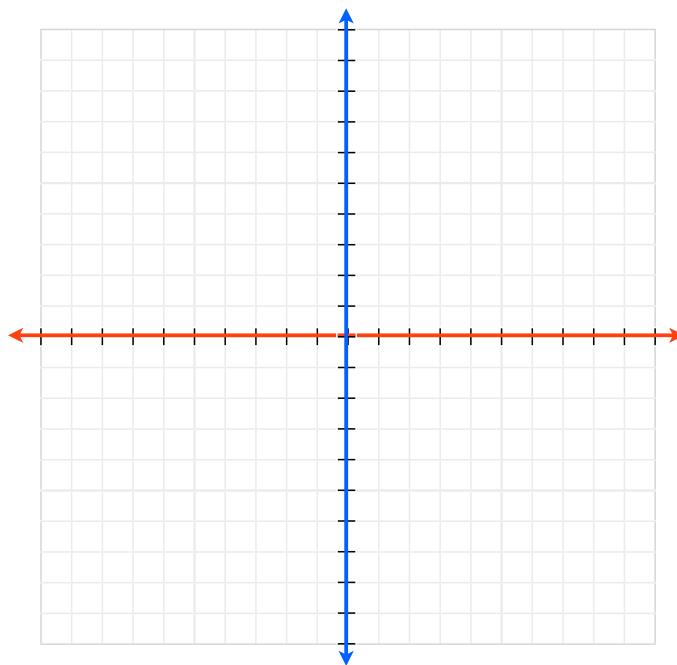
Graph the following exponential equation

$$y = 2 \cdot 2^{(x+1)} + 3$$



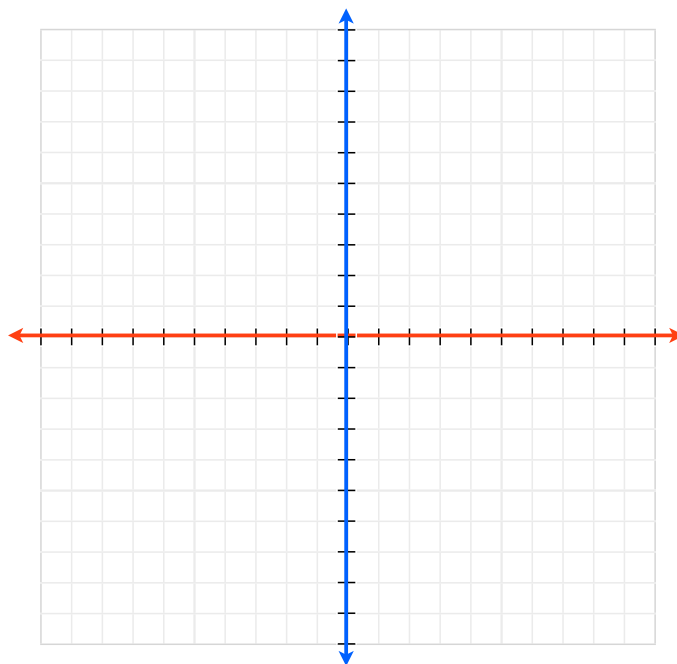
Graph the following exponential equation

$$y = 3^{(x-3)} - 2$$



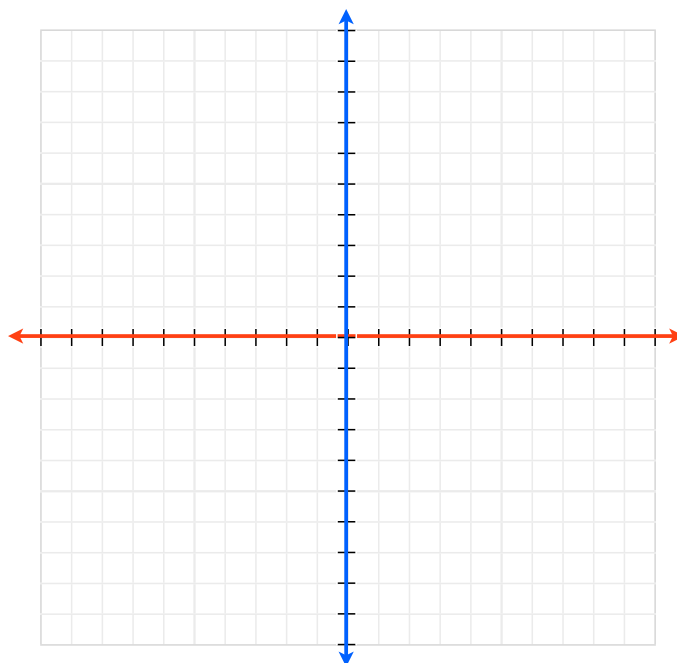
Graph the following exponential equation

$$y = -1 \cdot 2^{(x+2)} + 6$$



Graph the following exponential equation

$$y = -2 \cdot 3^x + 4$$



Exponential Equation

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