

8-4 Graphing Exponentials

I can graph exponential functions given an equation

I can identify key features from an equation or a graph

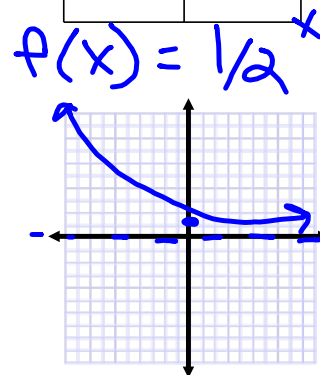
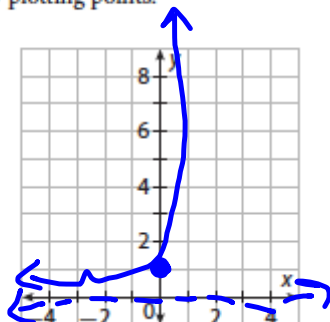
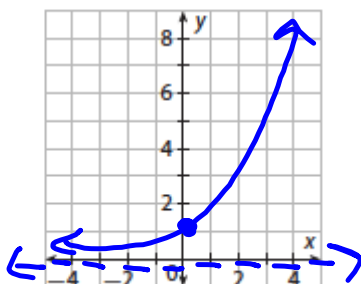
Complete the input-output table for each of the parent exponential functions below.

x	$f(x) = 2^x$
-3	
-2	
-1	
0	
1	
2	
3	

x	$p(x) = 10^x$
-3	
-2	
-1	
0	
1	
2	
3	

x	$f(x) = \left(\frac{1}{2}\right)^x$
-3	
-2	
-1	
0	
1	
2	
3	

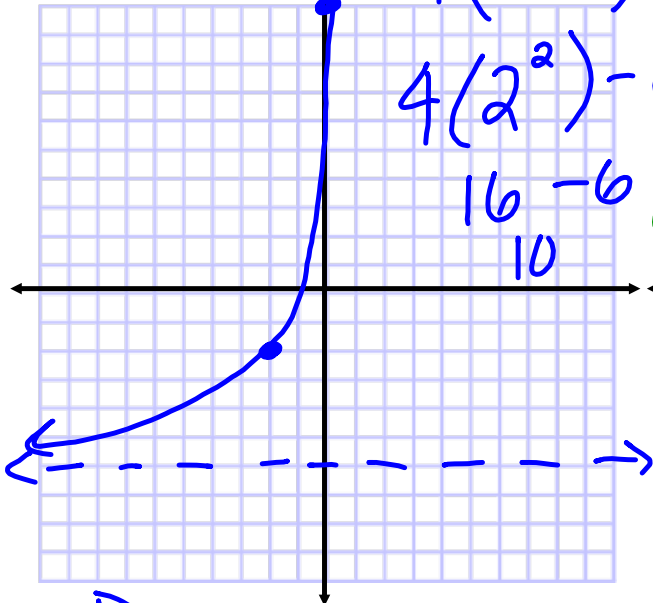
Graph the parent functions $f(x) = 2^x$ and $p(x) = 10^x$ by plotting points.



--Task--

Graph each function and state the domain, range, y-intercept, and asymptote for each.

$$g(x) = 4(2^{x+2}) - 6$$



- Down 6
- Left 2

$$S: 4$$

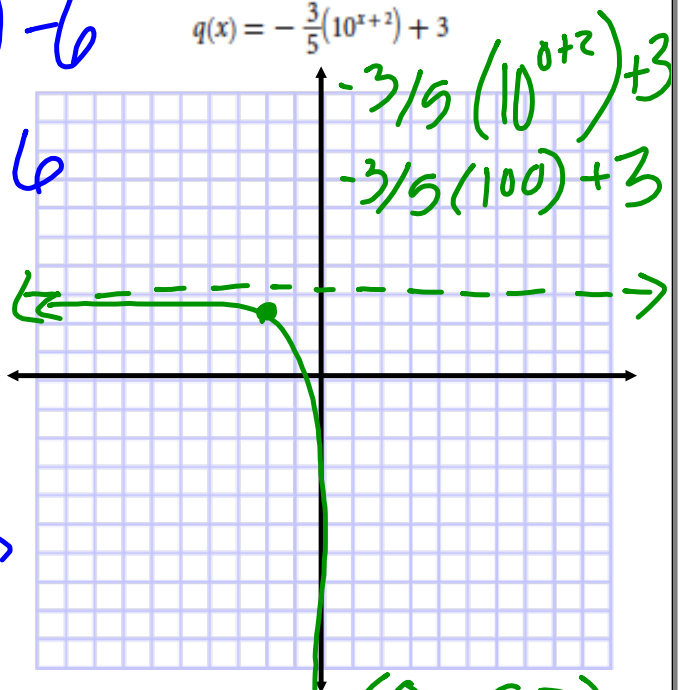
$$D: (-\infty, \infty)$$

$$R: (-6, \infty)$$

$$y\text{-int: } (0, 10)$$

$$y = -6$$

$$q(x) = -\frac{3}{5}(10^{x+2}) + 3$$



- Up 3
- Left 2
- STRETCH $-\frac{3}{5}$

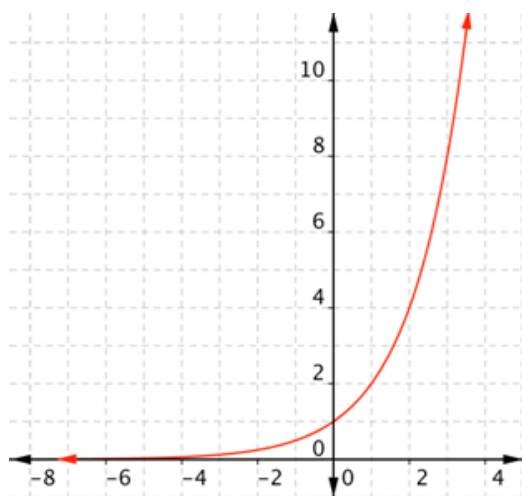
$$D: (-\infty, \infty)$$

$$R: (-\infty, 3)$$

$$y: (0, -57)$$

$$y = 3$$

State the domain, range, y-intercept, asymptote, increasing, decreasing, and end behavior.



Domain:

Range:

Y-intercept:

Horizontal Asymptote:

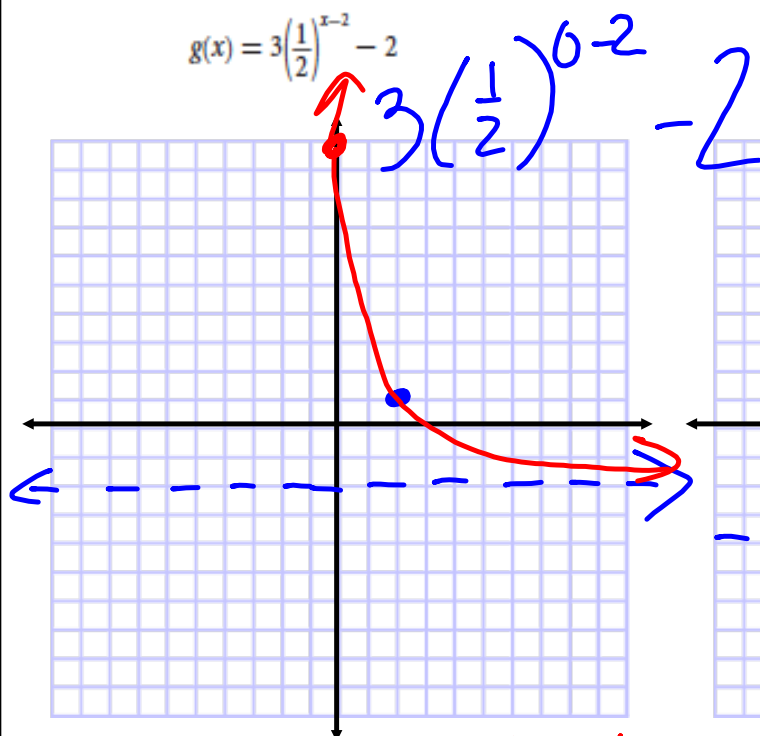
Increasing:

Decreasing:

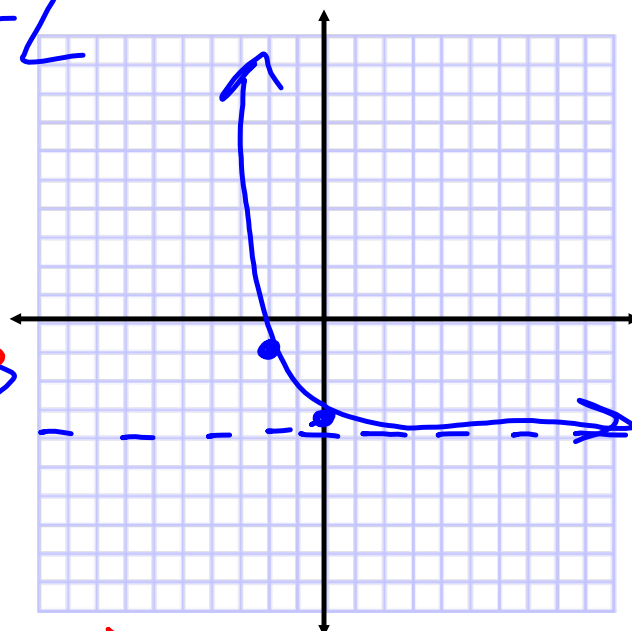
End Behavior:

Graph each function and state the domain, range, y-intercept, and asymptote for each.

$$g(x) = 3\left(\frac{1}{2}\right)^{x-2} - 2$$



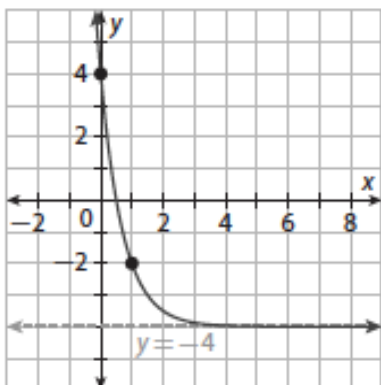
$$g(x) = 3\left(\frac{1}{3}\right)^{x+2} - 4$$



STRETCH 3
Down 2
Right 2

$D: (-\infty, \infty)$
 $R: (-2, \infty)$
y-int (0, 10)
 $y = -2$

State the domain, range, y-intercept, asymptote, increasing, decreasing, and end behavior.



Domain:

Range:

Y-intercept:

Horizontal Asymptote:

Increasing:

Decreasing:

End Behavior: