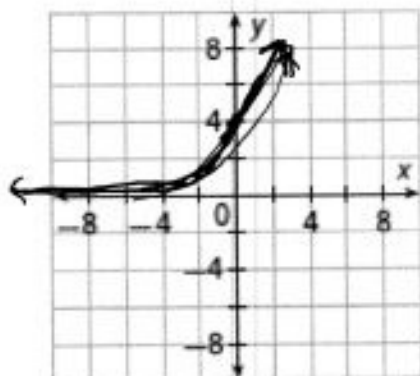


Describe the effect of each transformation on the parent function. Graph the parent function and its transformation. Then determine the domain, range, and y-intercept of each function.

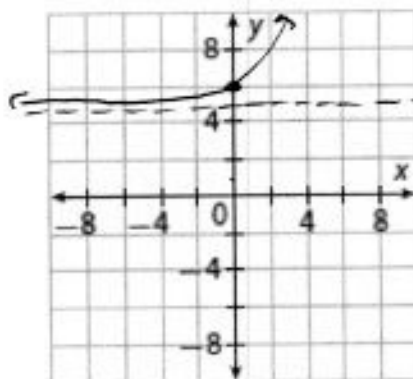
3. $f(x) = 2^x$ and $g(x) = 2^{x+2}$ left 2

D: $(-\infty, \infty)$
R: $(0, \infty)$
y-int: $(0, 4)$



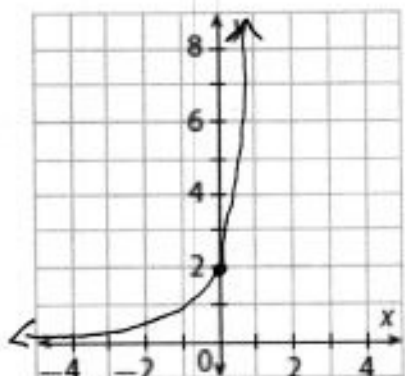
4. $f(x) = 2^x$ and $g(x) = 2^x + 5$ up 5

D: $(-\infty, \infty)$
R: $(5, \infty)$
y-int: $(0, 6)$



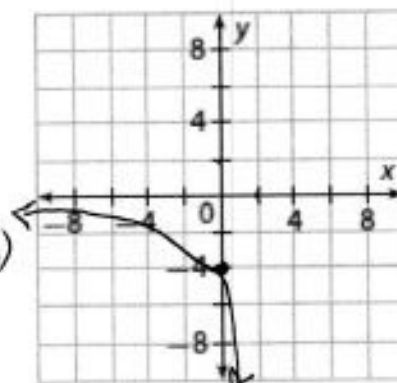
5. $f(x) = 10^x$ and $g(x) = 2(10^x)$ v.s. by 2

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



6. $f(x) = 10^x$ and $g(x) = -4(10^x)$ v. reflect v.s. by 4

D: $(-\infty, \infty)$
R: $(-\infty, 0)$
y-int: $(0, -4)$



State the domain and range of the given function. Then identify the new values of the reference points and the asymptote. Use these values to graph the function.

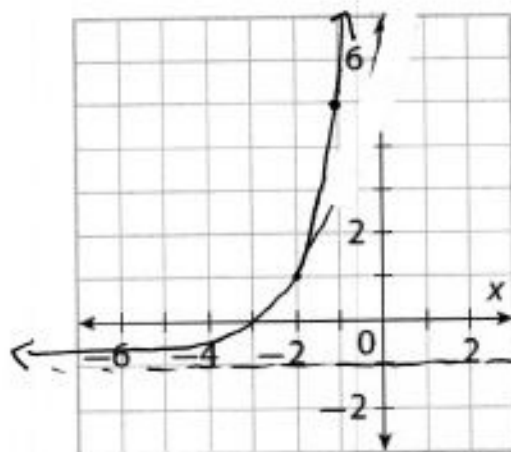
11. $h(x) = 2(3)^{x+2} - 1$

x	y
-2	1
-1	5

Asymp: $y = -1$

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

R: $(-1, \infty)$



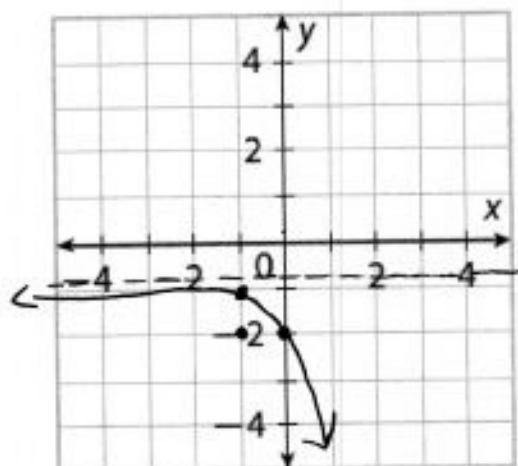
15. $h(x) = -\frac{1}{4}(5)^{x+1} - \frac{3}{4}$

Asymp: $y = -\frac{3}{4}$

x	y
-1	-1
0	-2

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

R: $(-\infty, \frac{3}{4})$



Describe the transformation(s) from each parent function and give the domain and range of each function.

3. $g(x) = -\left(\frac{1}{10}\right)^{x-1} + 2$

v. reflection
right 1
up 2

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

R: $(-\infty, 2)$

4. $g(x) = 3\left(\frac{1}{2}\right)^{x+3} - 6$

v. stretch by 3
left +3
down 6

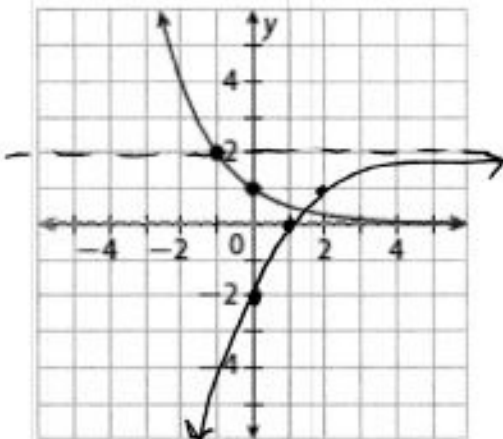
D: $(-\infty, \infty)$

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

For each of the transformed functions, use the reference points and the asymptote to draw the transformed function on the grid with the parent function. Then describe the domain and range of the transformed function using set notation.

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

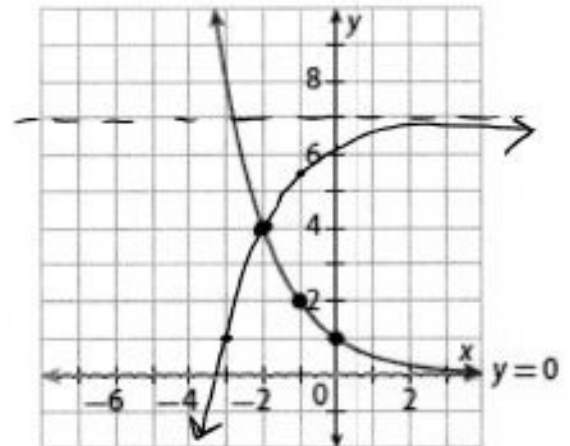
x	y
0	2
1	6
2	1



D: $(-\infty, \infty)$
R: $(-\infty, 2)$

8. $g(x) = -3\left(\frac{1}{2}\right)^{x+2} + 7$

x	y
-1	5.5
-2	4
-3	1.5
-4	0.5



D: $(-\infty, \infty)$
R: $(-\infty, 7)$

Review

Solve the following rational inequalities

1. $\frac{1}{x+2} > \frac{2}{x-1}$

$$\frac{1}{x+2} - \frac{2}{x-1} > 0$$

$$\frac{x-1-2x-4}{(x+2)(x-1)} > 0$$

$$\frac{-x-5}{(x+2)(x-1)} > 0$$

$-6: \frac{-}{-} = +$
 $-3: \frac{-}{-} = +$
 $0: \frac{-}{+} = -$
 $2: \frac{-}{+} = -$
 $++$

$(-\infty, -5) \cup (-2, 1)$

2. $\frac{x^3-4x}{x^2+2} \leq 0$

$$\frac{x(x+2)(x-2)}{x^2+2} \leq 0$$

$-3: \frac{-}{+} = -$
 $-1: - + - = +$
 $1: + + - = -$
 $3: + + + = +$

$(-\infty, -2] \cup [0, 2]$