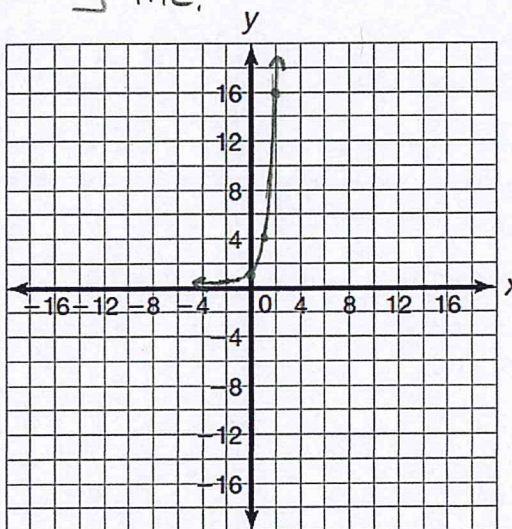


Complete the table and sketch the graph for each of the following functions. Then determine the x-intercept(s), y-intercepts, asymptotes, domain, range, and interval(s) if increase/decrease.

1. $f(x) = 4^x$ *#s greater than 1 will result in an increasing fnc.*

x	f(x)
-2	$4^{-2} = \frac{1}{16}$
-1	$4^{-1} = \frac{1}{4}$
0	$4^0 = 1$
1	$4^1 = 4$
2	$4^2 = 16$



x-intercept: None

y-intercept: (0, 1)

asymptote: $y = 0$

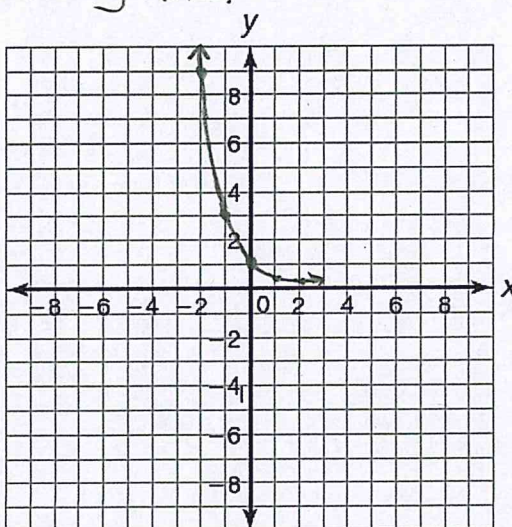
domain: All real #s

range: $y > 0$

interval(s) of increase/decrease:

2. $f(x) = \frac{1}{3}^x$ *#s between 0 and 1 will result in a decreasing fnc.*

x	f(x)
-2	$(\frac{1}{3})^{-2} = 9$
-1	$(\frac{1}{3})^{-1} = 3$
0	$(\frac{1}{3})^0 = 1$
1	$(\frac{1}{3})^1 = \frac{1}{3}$
2	$(\frac{1}{3})^2 = \frac{1}{9}$



x-intercept: None

y-intercept: (0, 1)

asymptote: $y = 0$

domain: All real #s

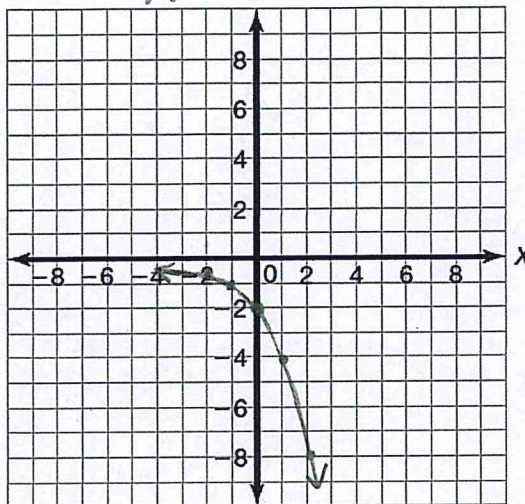
range: $y > 0$

interval(s) of decrease/increase:

3. $f(x) = -2 \cdot 2^x$

Since 2^x is multiplied by a negative #, the fnc is decreasing (It goes the opposite way)

x	f(x)
-2	$-2 \cdot 2^{-2} = -\frac{1}{2}$
-1	$-2 \cdot 2^{-1} = -1$
0	$-2 \cdot 2^0 = -2$
1	$-2 \cdot 2^1 = -4$
2	$-2 \cdot 2^2 = -8$



x-intercept: None

domain: All real #s

y-intercept: (0, -2)

range: $y < 0$

asymptote: $y = 0$

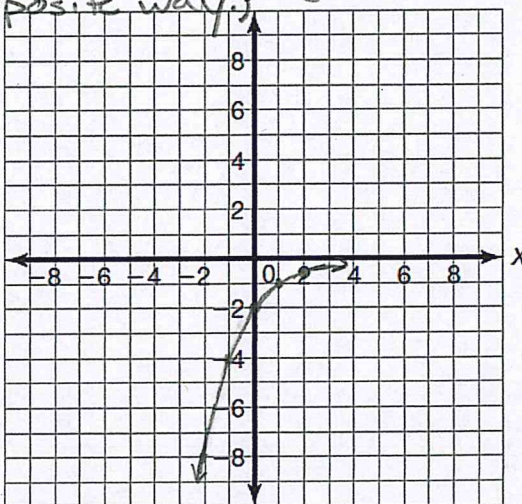
interval(s) of increase/decrease: decrease

Compare 2^x to $(\frac{1}{2})^x$

4. $f(x) = -2 \cdot \frac{1}{2}^x$

Since $(\frac{1}{2})^x$ is multiplied by a negative #, the fnc is increasing (It goes the opposite way)

x	f(x)
-2	$-2 \left(\frac{1}{2}\right)^{-2} = -8$
-1	$-2 \left(\frac{1}{2}\right)^{-1} = -4$
0	$-2 \left(\frac{1}{2}\right)^0 = -2$
1	$-2 \left(\frac{1}{2}\right)^1 = -1$
2	$-2 \left(\frac{1}{2}\right)^2 = -\frac{1}{2}$



x-intercept: None

domain: All real #s

y-intercept: (0, -2)

range: $y < 0$

asymptote: $y = 0$

interval(s) of increase/decrease: increase