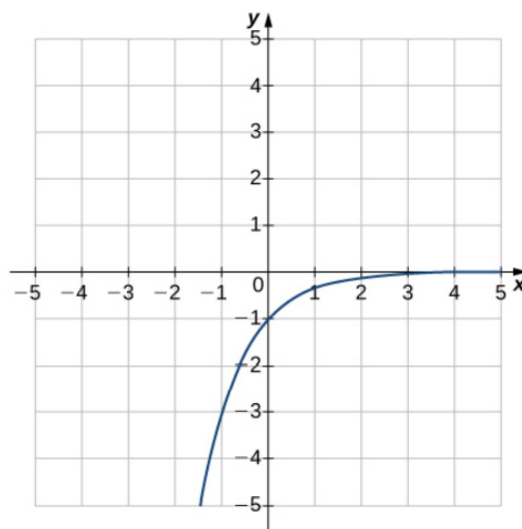


Exercise 237

For the following exercises, match the exponential equation to the correct graph.

- a. $y = 4^{-x}$
- b. $y = 3^{x-1}$
- c. $y = 2^{x+1}$
- d. $y = \left(\frac{1}{2}\right)^x + 2$
- e. $y = -3^{-x}$
- f. $y = 1 - 5^x$

**Solution**

The equation corresponding to the given graph is e.,

$$y = -3^{-x}.$$

Notice that at $x = -1$ the function has the value $y = -3$, and at $x = 0$ the function has the value $y = -1$.

$$y(-1) = -3^{-(-1)} = -3^1 = -3$$

$$y(0) = -3^{-(0)} = -3^0 = -1$$

Also, notice that the function tends to $y = 0$ as x becomes large.

$$y = \underbrace{-3^{-x}}_{\approx 0 \text{ for large } x} \approx 0$$