

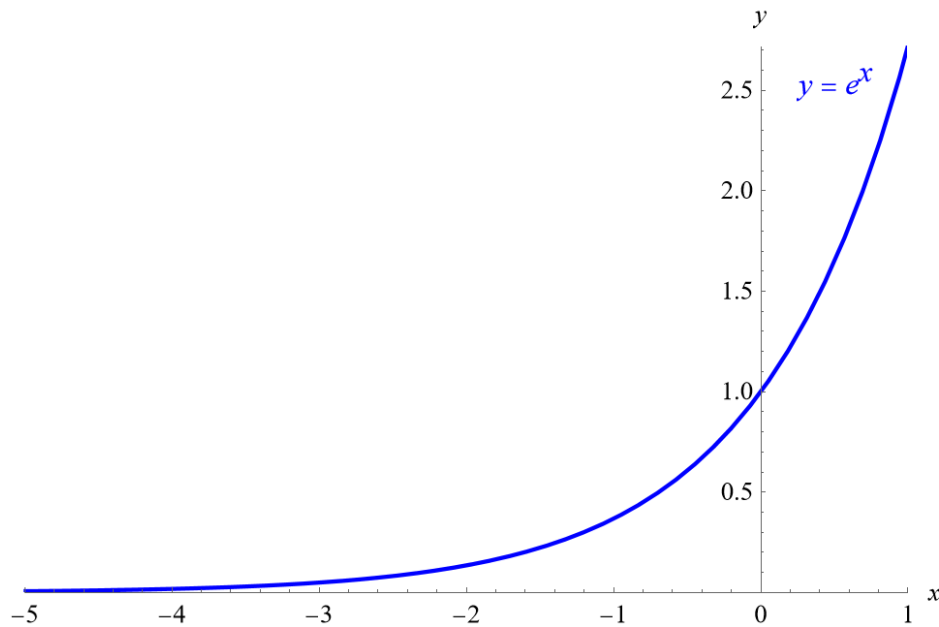
Exercise 245

For the following exercises, sketch the graph of the exponential function. Determine the domain, range, and horizontal asymptote.

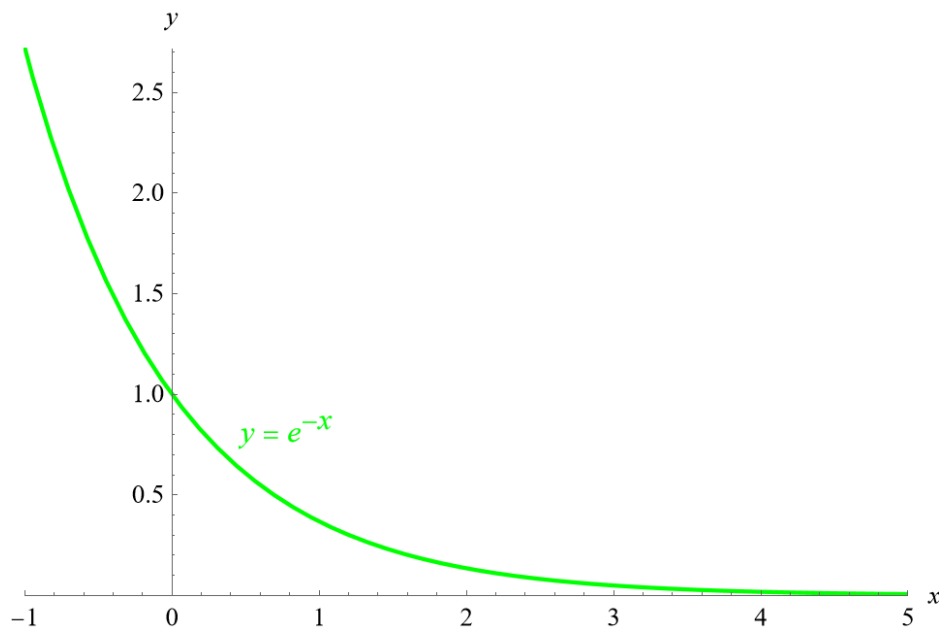
$$f(x) = e^{-x} - 1$$

Solution

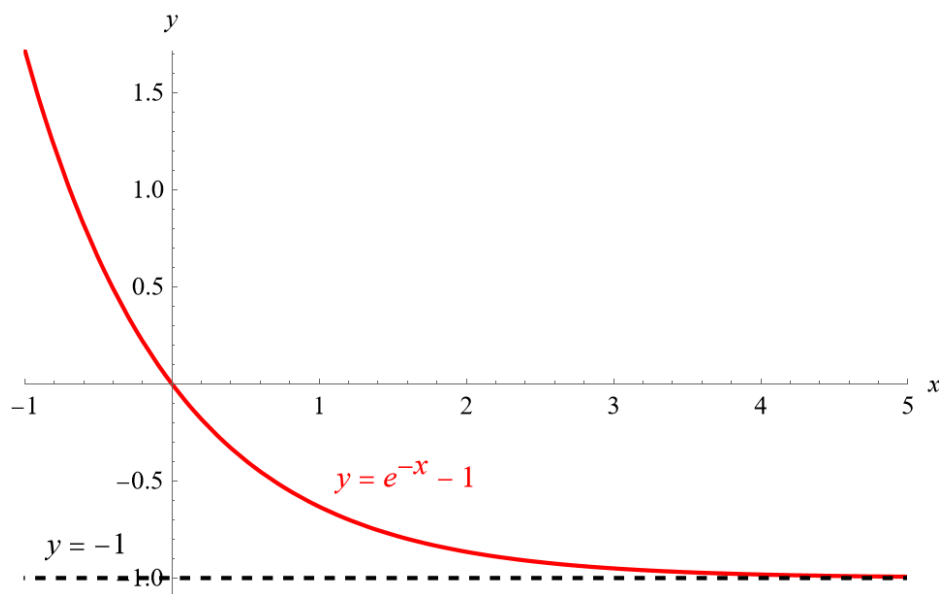
Start by drawing the parent function $y = e^x$.



Changing x to $-x$ reflects the graph about the y -axis.



Subtracting 1 from this function shifts the entire graph down by 1 unit.



$$\text{Domain : } \{x \mid -\infty < x < \infty\}$$

$$\text{Range : } \{y \mid -1 < y < \infty\}$$

$$\text{Horizontal Asymptote : } y = -1$$