

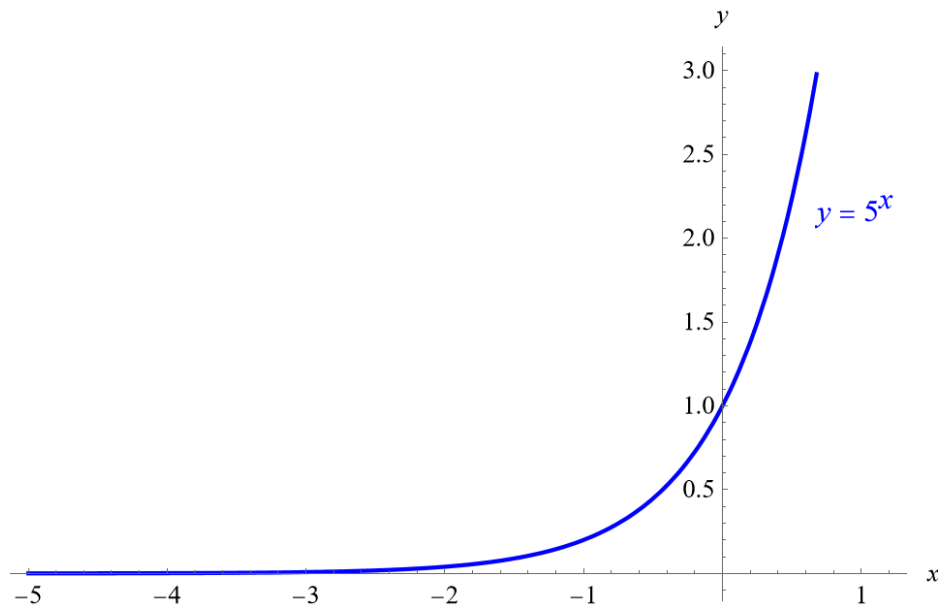
Exercise 244

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

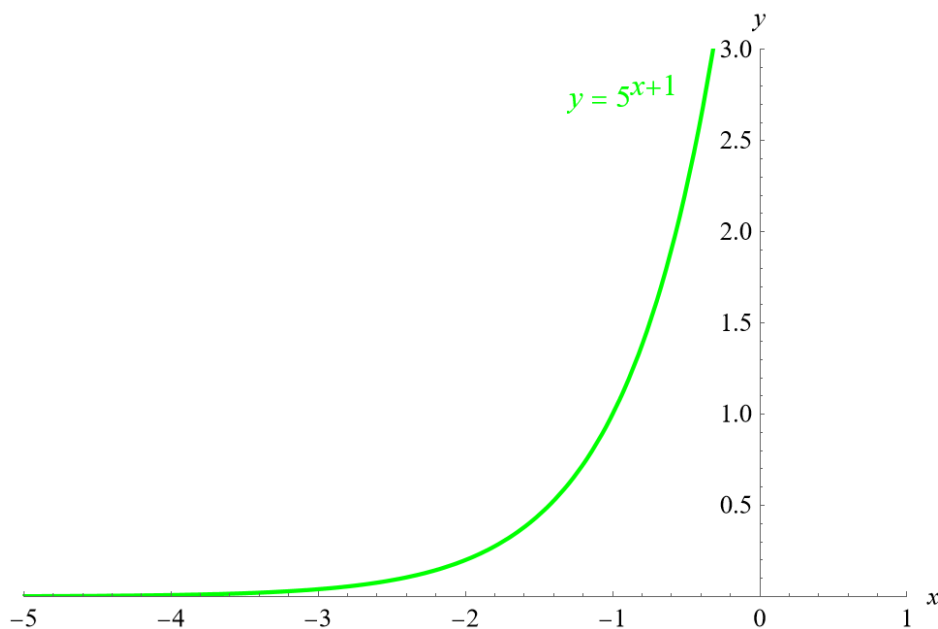
$$f(x) = 5^{x+1} + 2$$

Solution

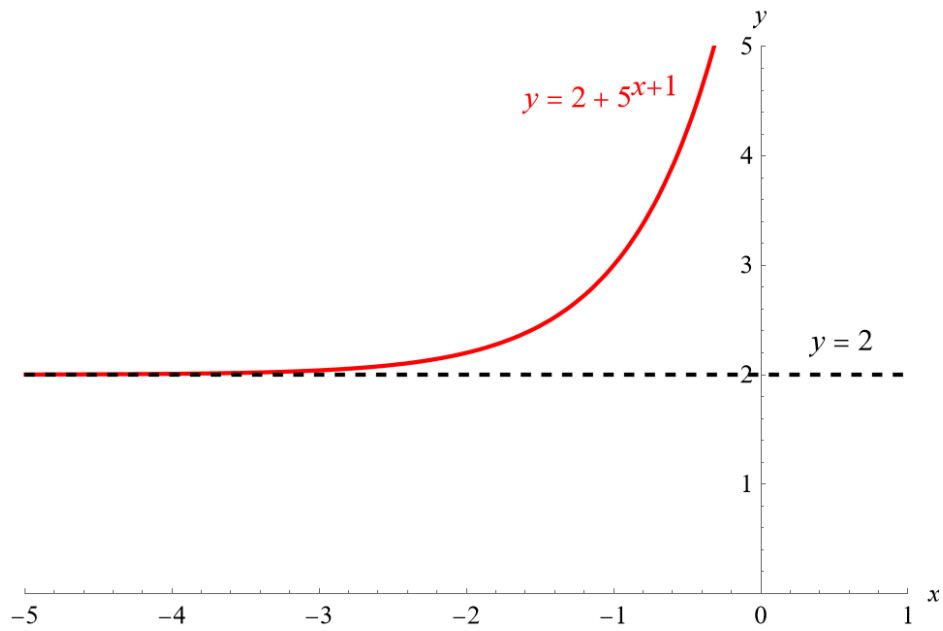
Start by drawing the parent function $y = 5^x$.



Changing x to $x + 1$ shifts the entire graph to the left by 1 unit.



Adding 2 to this function shifts the entire graph up by 2 units.



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

Range : $\{y \mid 2 < y < \infty\}$

Horizontal Asymptote : $y = 2$