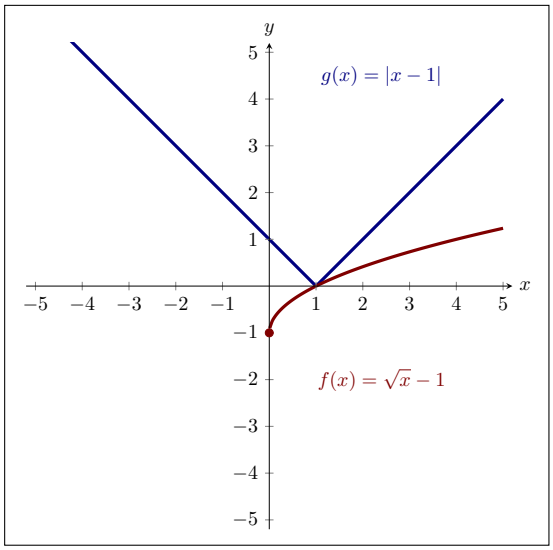
Exercise 1 *Let $g(x) = |x - 1|$ and let $f(x) = \sqrt{x} - 1$. Choose the correctly sketched and labeled graph of g and f on the interval $[-5, 5]$.*

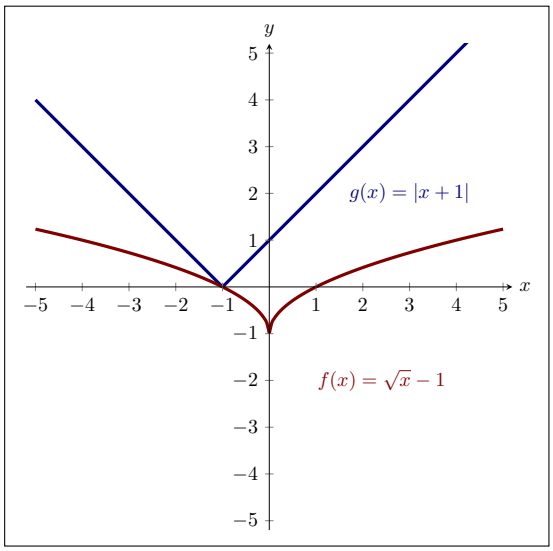
Multiple Choice:

(a)

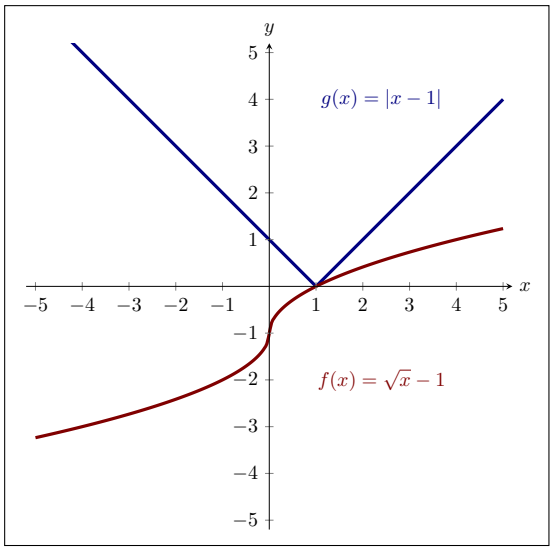


✓

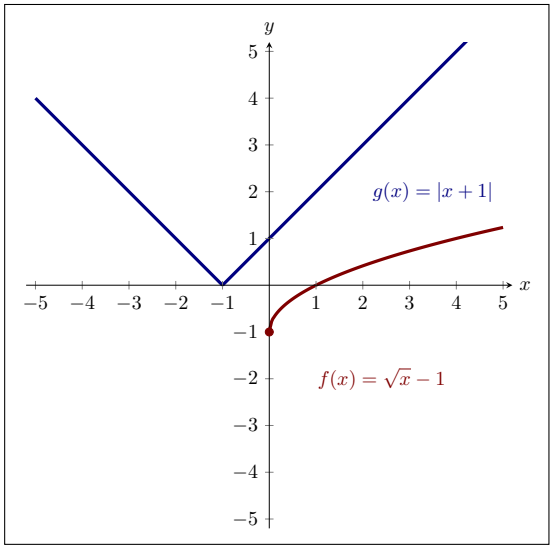
(b)



(c)



(d)



Exercise 1.1 *Let h be a function defined on $(0, 2)$ such that $f(x) \leq h(x) \leq g(x)$ for all x with $0 < x < 2$ except possibly at $x = 1$. Then*

$$\lim_{x \to 1} h(x) = \boxed{0}$$

due to (limit laws/ continuity/ of the difference law/ quotient law/ the Squeeze Theorem ✓).

Exercise 1.1.1 *Compute the limit.*

$$\lim_{x \to 1} \frac{e^{h(x)}}{\cos\left(g(x)\right)} = \frac{e^{\boxed{0}}}{\cos\left(\boxed{0}\right)} = \boxed{1}$$