1. p65e06-0 - Halla el dominio de las siguientes funciones:
   (a) $f(x) = 0x - 3$

   Sol: $Dom\,(f) = \mathbb{R}$

   (b) $f(x) = x^3 - 5x^2 + 2$

   Sol: $Dom\,(f) = \mathbb{R}$

   (c) $f(x) = \frac{x-1}{x+5}$

   Sol: $Dom\,(f) = (-\infty, -5) \cup (-5, \infty)$

   (d) $f(x) = 7x - 1$

   Sol: $Dom\,(f) = \mathbb{R}$

   (e) $f(x) = \frac{2}{x}$

   Sol: $Dom\,(f) = (-\infty, 0) \cup (0, \infty)$

   (f) $f(x) = \sqrt[3]{\frac{x+1}{x-2}}$

   Sol: $Dom\,(f) = (-\infty, 2) \cup (2, \infty)$

   (g) $f(x) = \sqrt{x^2 - 9}$

   Sol: $Dom\,(f) = (-\infty, -3] \cup [3, \infty)$

   (h) $f(x) = \sqrt{x + 3}$

   Sol: $Dom\,(f) = [-3, \infty)$

2. p65e17-0 - Dadas las funciones $f(x) = x^2 + 5$, $g(x) = \frac{x-1}{x+3}$ y $h(x) = \sqrt{x}$. Calcula:
   (a) $g \circ f$

   Sol: $g(f(x)) = \frac{x^2+4}{x^2+8}$

   (b) $f \circ g$

   Sol: $f(g(x)) = \frac{(x-1)^2}{(x+3)^2} + 5$

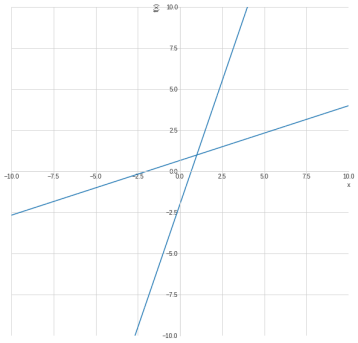
(c) $h \circ g \circ f$

Sol: $h(g(f(x))) = \frac{\sqrt{x^2+4}}{\sqrt{x^2+8}}$

3. p66e23y24 - Halla la función inversa de $f(x)$, y comprueba el resultado, siendo:

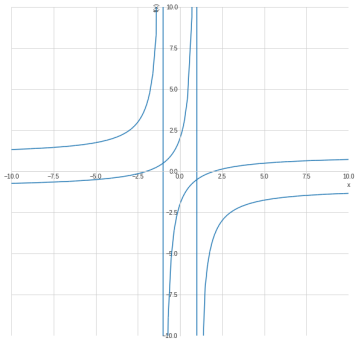
(a) $f(x) = 3x - 2$

Sol: $f^{-1}(x) = \frac{x}{3} + \frac{2}{3}$
$f^{-1} \circ f(x) = x = x$



(b) $f(x) = \frac{x+2}{-x+1}$

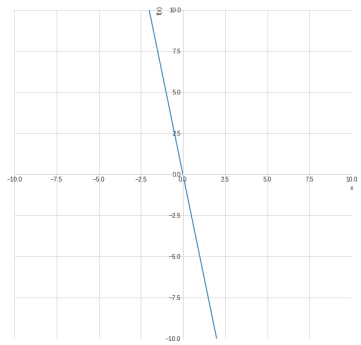
Sol: $f^{-1}(x) = \frac{x-2}{x+1}$
$f^{-1} \circ f(x) = \frac{-2+\frac{x+2}{-x+1}}{1+\frac{x+2}{-x+1}} = x$



4. p68e28 - Representa gráficamente las siguientes funciones:

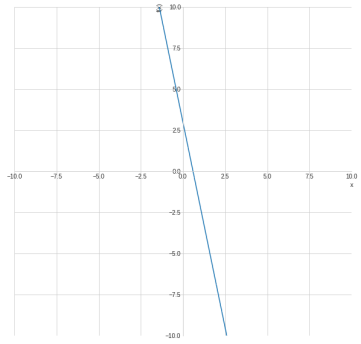
(a) $y = -5x$

Sol:



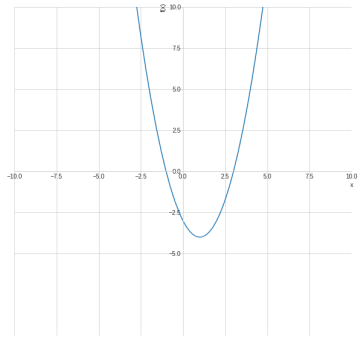
(b) $y = -5x + 3$

Sol:



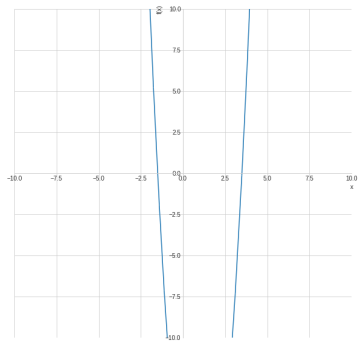
(c) $y = x^2 - 2x - 3$

Sol:



(d) $y = 4x^2 - 8x - 21$

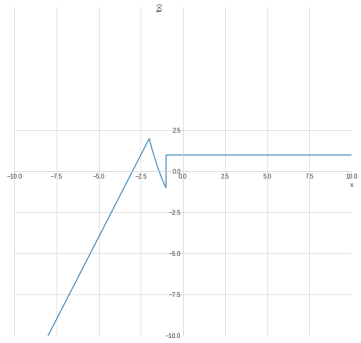
Sol:



5. p68e35 - Representa gráficamente las siguientes funciones:

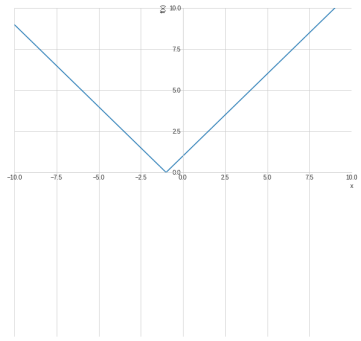
(a) $y = \begin{cases} 2x + 6 & \text{for } x < -2 \\ x^2 - 2 & \text{for } x \leq -1 \\ 1 & \text{otherwise} \end{cases}$

Sol:



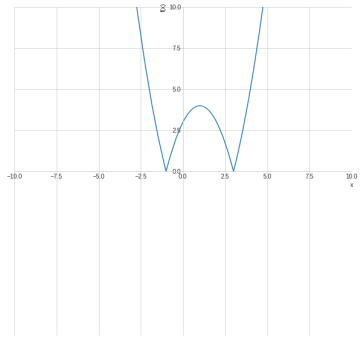
(b) $y = |x + 1|$

Sol:



(c) $y = \left|x^2 - 2x - 3\right|$

Sol:



(d) $y = \begin{cases} \frac{x}{2} & \text{for } x \geq 1 \\ \frac{1}{x-1} & \text{otherwise} \end{cases}$

Sol: