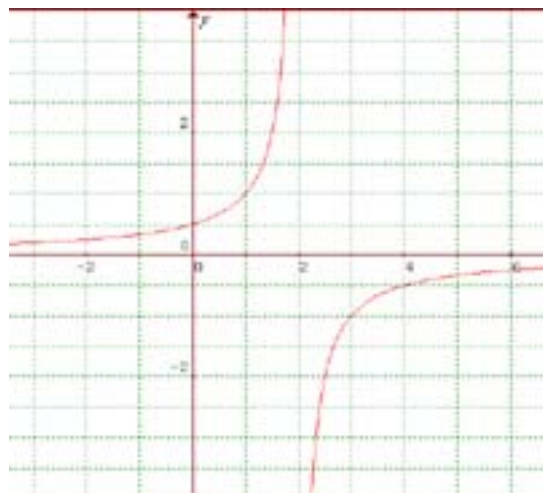
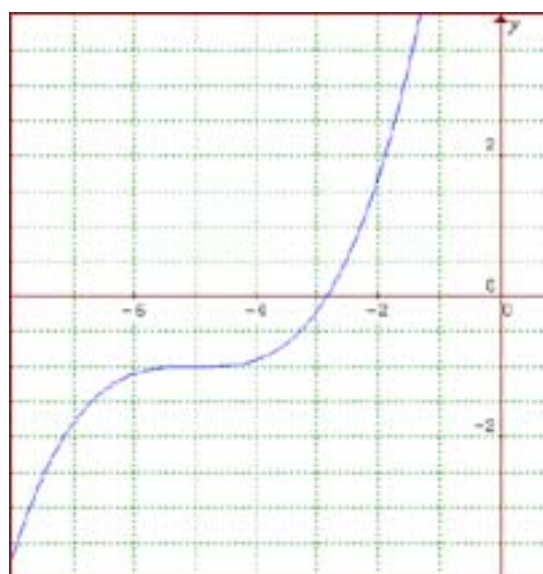




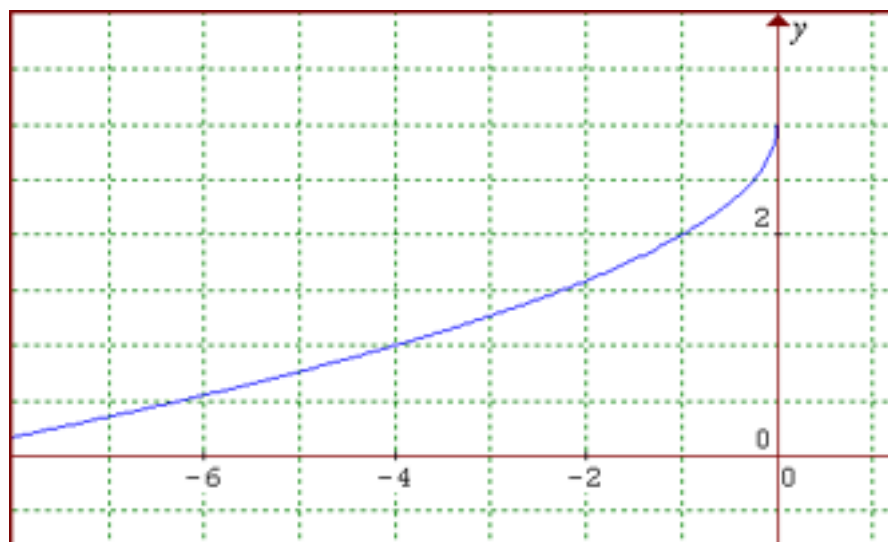
c)



d)

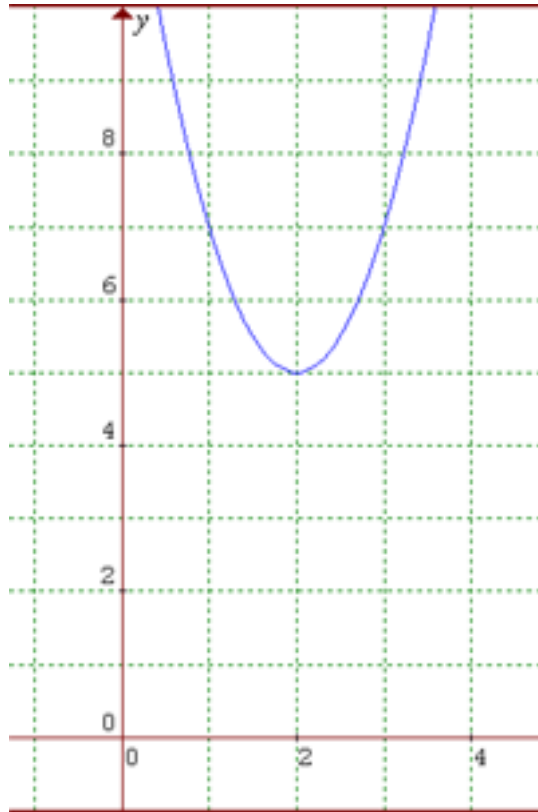


e)





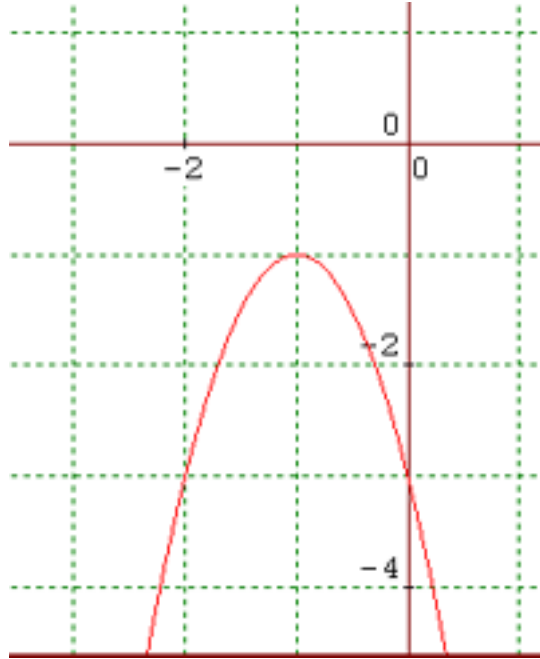
- c)  $f(x) = 2(x-2)^2 + 5$   
vertex (2,5)  
minimum value is 5



- d)  $f(x) = 5(x-2)^2 - 20$   
vertex (2,-20)  
minimum value -20



- e)  $f(x) = -2(x+1)^2 - 1$   
 vertex  $(-1, -1)$   
 maximum value is  $-1$



5. a)  $f(g(x)) = \frac{2x-1}{2x}$  Domain is  $(-\infty, 0) \cup (0, \infty)$
- b)  $f(g(x)) = \frac{1}{-x-4}$  Domain is  $(-\infty, -5) \cup (-5, -4) \cup (-4, \infty)$
- c)  $f(g(x)) = \frac{18-15x}{24-19x}$  Domain is  $(-\infty, \frac{6}{5}) \cup (\frac{6}{5}, \frac{24}{19}) \cup (\frac{24}{19}, \infty)$
- d)  $f(g(x)) = \sqrt[4]{x+3}$  Domain is  $[-3, \infty)$
- e)  $f(g(x)) = \sqrt{3-\sqrt{2x-1}}$  Domain is  $[\frac{-1}{2}, 5]$
6. a)  $f^{-1}(x) = \frac{1}{3}x - \frac{5}{3}$  b)  $f^{-1}(x) = \frac{1+2x}{3x}$
- c)  $f^{-1}(x) = \sqrt{\frac{2-x}{3}}$  d)  $f^{-1}(x) = 3-x^2$
- e)  $f^{-1}(x) = \sqrt[3]{2-x}$