4 - Graphing Inverses

Find the domain and range of the given function. Then, find the inverse of the function and state its domain and range. Finally, graph the function and its inverse to determine if the inverse is a function.
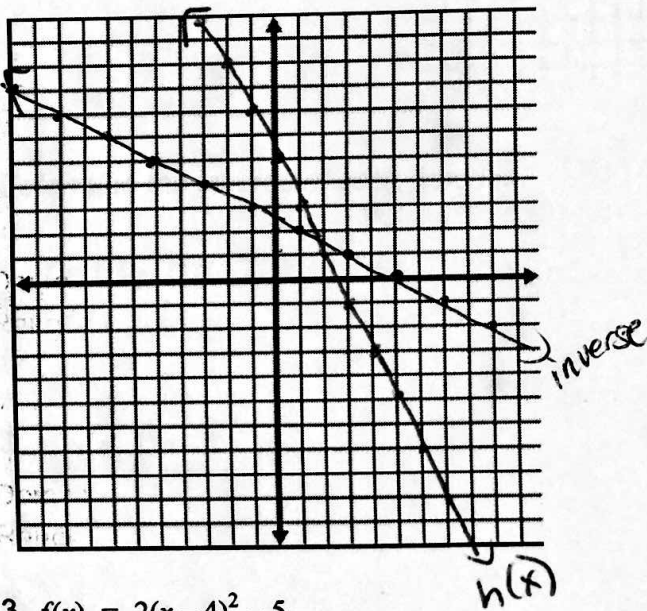
1. $h(x) = -2x + 5$

Domain: $\mathbb{R}$ $(-\infty, \infty)$ all real numbers
Range: $(-\infty, \infty)$

$f^{-1}(x) = \dfrac{x-5}{-2}$ (Function/Not Function)

Domain: $(-\infty, \infty)$
Range: $(-\infty, \infty)$

inverse

$h(x)$

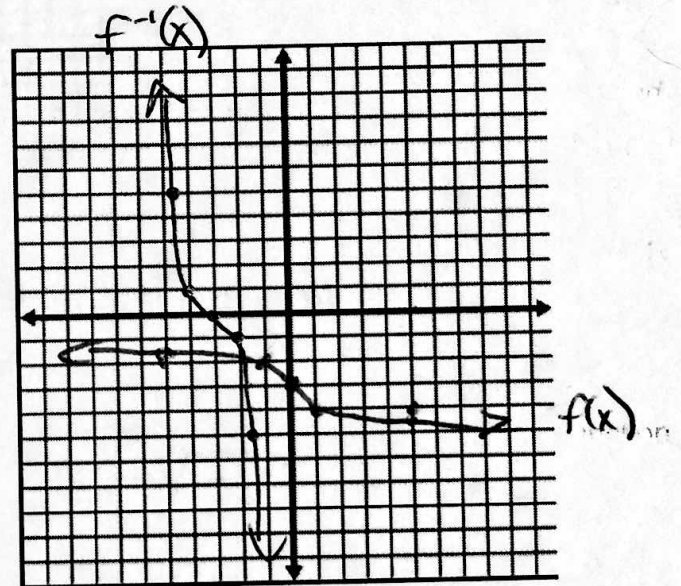**2.** $f(x) = -\sqrt[5]{x} - 3$

Domain: $(-\infty, \infty)$
Range: $(-\infty, \infty)$

$f^{-1}(x) = \left(\dfrac{x+3}{-1}\right)^5$ (Function/Not Function)

Domain: $(-\infty, \infty)$
Range: $(-\infty, \infty)$

$f^{-1}(x)$

$f(x)$

3. $f(x) = 2(x-4)^2 - 5$
Domain: $(-\infty, \infty)$
Range: $[5, \infty)$

$f^{-1}(x) = \sqrt{\left(\dfrac{x+5}{2}\right)} + 4$
Domain: $[5, \infty)$
Range: $(-\infty, \infty)$

4. $g(x) = \dfrac{-3x-10}{5}$
Domain: $(-\infty, \infty)$
Range: $(-\infty, \infty)$

$f^{-1}(x) = \dfrac{5x+10}{-3}$
Domain: $(-\infty, \infty)$
Range: $(-\infty, \infty)$

oops-graphs got cut off. ☹