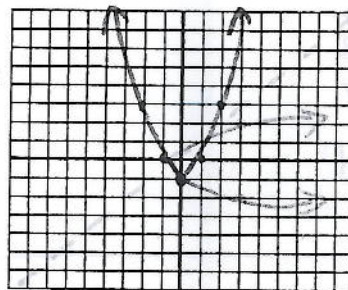


## Part II

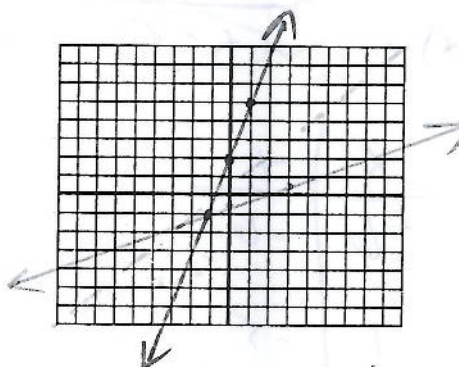
Determine the inverse for each function, then sketch the graphs and state the domain and range for both the original function and its inverse.

4.  $f(x) = x^2 - 1$ ;  $f^{-1}(x) = \sqrt{x+1}$   
 Domain:  $\mathbb{R}$  Domain:  $x \geq -1$   $[-1, \infty)$   
 Range:  $y \geq -1$  Range:  $\mathbb{R}$   
 or  $[-1, \infty)$



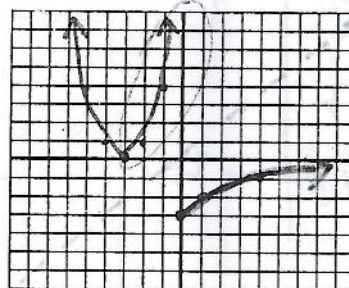
ADD 1 then take square root of the quantity

5.  $g(x) = 3x + 2$ ;  $g^{-1}(x) = \frac{x-2}{3}$   
 Domain:  $\mathbb{R}$  Domain:  $\mathbb{R}$   
 Range:  $\mathbb{R}$  Range:  $\mathbb{R}$



SUBTRACT 2 then divide quantity by 3

6.  $f(x) = (x+3)^2$ ;  $f^{-1}(x) = \sqrt{x} - 3$   
 Domain:  $\mathbb{R}$  Domain:  $x \geq 0$   $[0, \infty)$   
 Range:  $y \geq 0$  Range:  $y \geq -3$   
 $[0, \infty)$   $[-3, \infty)$

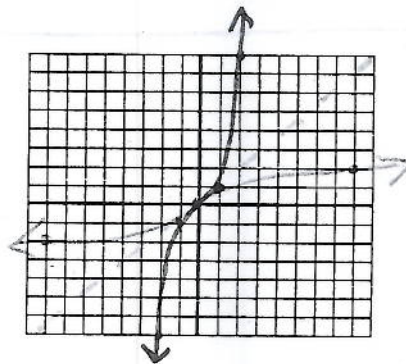


Take square root, then subtract 3

7.  $f(x) = x^3$ ;  $f^{-1}(x) = \sqrt[3]{x}$

Domain:  $\mathbb{R}$  Domain:  $\mathbb{R}$   
 Range:  $\mathbb{R}$  Range:  $\mathbb{R}$

Take the cube root



MUST restrict domain  $x \geq -3$  or  $x \leq -3$  to have inverse

as a function