We have the function:
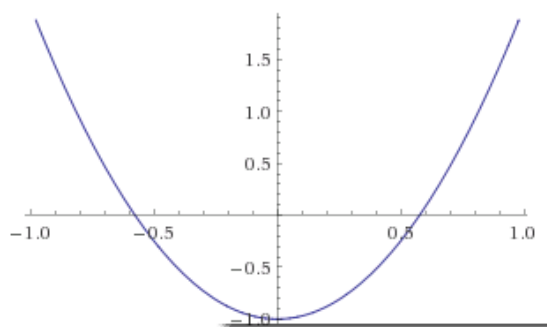
$$f(x) = 3x^2 - 1$$

To graph this function we need to follow such steps:

1) Plot $y = x^2$
2) Scale the graph with coefficient 3 to receive the graph of the function $y = 3x^2$
3) Move the graph below by 1 to receive $y = 3x^2 - 1$

After all these transformation we get the following:

Inverse function:

$$y = \sqrt{\frac{x + 1}{3}}$$

Graph of this function: