

FINDING INVERSE OF A FUNCTION

* FUNCTION MUST BE 1:1

1. REPLACE $f(x)$ WITH y
2. INTERCHANGE x AND y
3. SOLVE FOR y
4. REPLACE y WITH $f^{-1}(x)$
5. IF NECESSARY MAKE $f^{-1}(x)$ 1:1 USING GRAPH

8. $f(x) = 9x + 2$

① $y = 9x + 2$

② $x = 9y + 2$

③ $x - 2 = 9y$

$$\frac{x-2}{9} = \frac{9y}{9}$$

$$\frac{x-2}{9} = y$$

④ $f^{-1}(x) = \frac{x-2}{9}$

9. $f(x) = x^3 - 2$

① $y = x^3 - 2$

② $x = y^3 - 2$

③ $x + 2 = y^3$

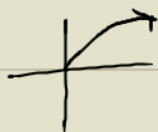
$$x + 2 = y^{\frac{3}{1}}$$

$$(x+2)^{\frac{1}{3}} = (y^{\frac{3}{1}})^{\frac{1}{3}}$$

$$\sqrt[3]{x+2} = y$$

④ $f^{-1}(x) = \sqrt[3]{x+2}$

10. $f(x) = \sqrt{x-3}$



① $y = \sqrt{x-3}$

② $x = \sqrt{y-3}$

③ $(x)^2 = (\sqrt{y-3})^2$

$$x^2 = y - 3$$

$$x^2 + 3 = y$$

④ $f^{-1}(x) = x^2 + 3$

⑤ $f^{-1}(x) = x^2 + 3, x \geq 0$

