

## Inverse Functions

Find the inverse of  $y = 4x - 2$

- 1) Switch  $x$  &  $y$
- 2) Solve for  $y$

$$x = 4y - 2$$

$$\frac{x+2}{4} = \frac{4y}{4}$$

$$\frac{x+2}{4} = y$$

$$y = 4x - 2$$

Tables

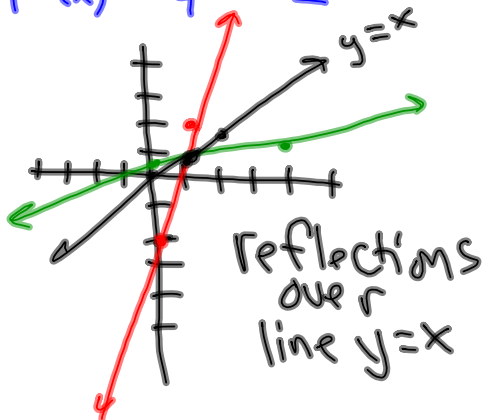
$x$	$y$	$x$	$f^{-1}(x)$
0	-2	-2	0
1	2	2	1

$$f^{-1}(x) = \frac{x+2}{4}$$

### Graphs

$$y = 4x - 2$$

$$f^{-1}(x) = \frac{1}{4}x + \frac{1}{2}$$

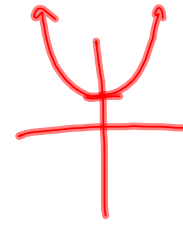


### Equations

$$f(x) = 4x - 2$$

$$f^{-1}(x) = \frac{1}{4}x + \frac{1}{2}$$

Find the inverse of  $y = x^2 + 1$  —



$$x = y^2 + 1$$

$$x - 1 = y^2$$

$$\boxed{\pm \sqrt{x-1} = y}$$

### 3 rules of exponents

$$x^a x^b = x^{a+b}$$

$$(x^a)^b = x^{ab}$$

$$(x^a)/(x^b) = \cancel{x^b} x^{a-b}$$

Solve

$$2^t = 7$$

$$\log_2 7 = t$$

$$\frac{\log 7}{\log 2} = t$$

$$\boxed{2.807 = t}$$

OR

$$2^t = 7$$

$$\log 2^t = \log 7$$

$$t \cdot \log 2 = \log 7$$

$$t = \frac{\log 7}{\log 2} = \boxed{2.807}$$

$$e^{2t} = 3$$

$$\ln e^{2t} = \ln 3$$

$$2t \cdot \cancel{\ln e} = \ln 3$$

$$2t = \ln 3$$

$$t = \frac{\ln 3}{2} = \boxed{.549}$$

OR

$$\frac{\ln 3}{2} = 2t$$

$$\frac{\ln 3}{2} = t$$