

121 § 2.5 II #s 50c, 50j, 58, 60, 68, 74
 #s 49, 50 Find the inverse of each function by reversing a composition.

50c $f(x) = 5x + 1$

$f: x \xrightarrow{\text{times 5}} 5x \xrightarrow{\text{plus 1}} 5x + 1$

$\frac{x-1}{5} \xleftarrow{\text{divide by 5}} x-1 \xleftarrow{\text{minus 1}} x \xrightarrow{f^{-1}}$

$$f^{-1}(x) = \frac{x-1}{5} = \frac{1}{5}x - \frac{1}{5}$$

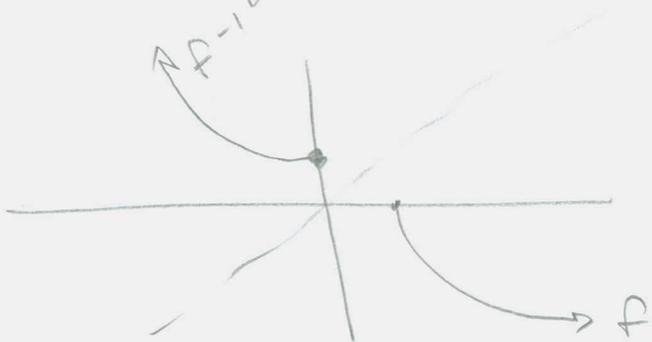
50j $f(x) = \sqrt[3]{x+3} - 9$

$f: x \xrightarrow{+3} x+3 \xrightarrow{\text{cube root}} \sqrt[3]{x+3} \xrightarrow{-9} \sqrt[3]{x+3} - 9$

$f^{-1}: (x+9) - 3 \xleftarrow{-3} (x+9)^3 \xleftarrow{\text{cube}} x+9 \xleftarrow{+9} x$

$$f^{-1}(x) = (x+9)^3 - 3$$

58 Sketch f^{-1} , given f 's graph



121 $\sqrt{2.5}$ #5 60, 68, 74

#s 59-66 Find the inverse of each function and graph f & f^{-1} on same coordinate plane.

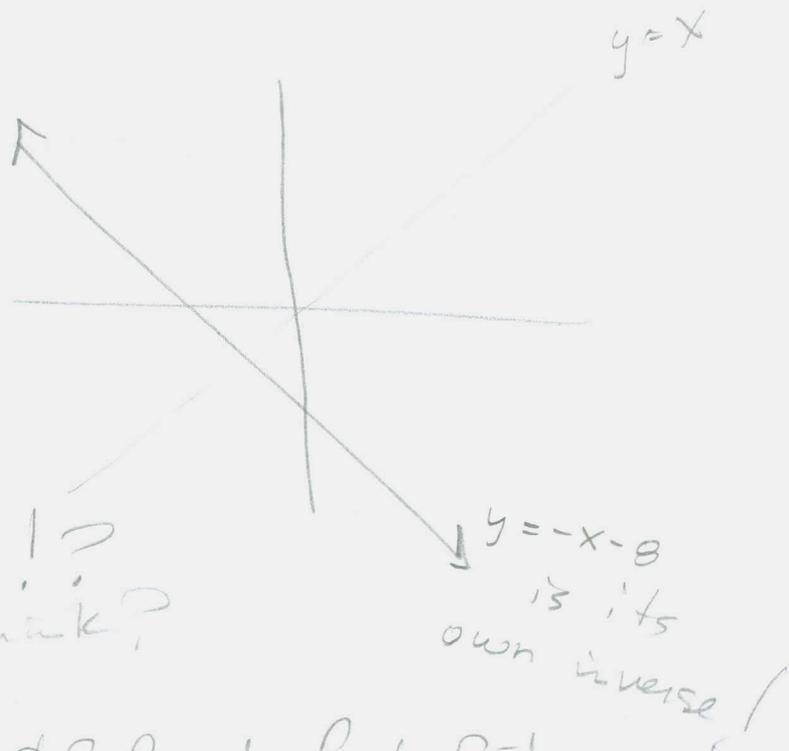
(60) $f(x) = -x - 8$

switch $y = -x - 8$
 $x = -y - 8$

$$-y - 8 = x$$

$$-y = x + 8$$

$y = -x - 8$ Weird!
Makes ya think?



#s 67-80 Use Switch & Solve to find f^{-1} .

(68) $f(x) = -2x + 5$

$$y = -2x + 5$$

$$x = -2y + 5$$

$$-2y + 5 = x$$

$$-2y = x - 5$$

$$y = \frac{x-5}{-2}$$

$$f^{-1}(x) = -\frac{1}{2}x + \frac{5}{2}$$

(74) $f(x) = \frac{2x-1}{x-6}$

$$\frac{2y-1}{y-6} = x$$

$$2y-1 = x(y-6)$$

$$2y-1 = xy-6x$$

$$2y-xy = -6x+1$$

$$y(2-x) = -6x+1$$

$$y = \frac{-6x+1}{2-x} = f^{-1}(x)$$

$$f^{-1}(x) = \frac{6x-1}{x-2}$$