$f(x)$ $(10,16)$ $f^{-1}(x)$ $(3,-16)$

$f^{-1}(x)$ $(16,10)$

$m = \frac{-16-10}{3-16} \quad -\frac{26}{-13} = m = 2$

$-16 = 2(3) + b$

$-16 = 6 + b$

$-6 \quad -6$

$-22 = b$

$f^{-1}(x) = 2x - 22$

28. $f(x) = x + 4$

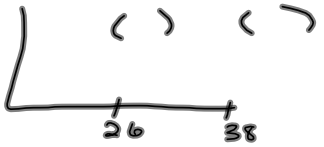
$y = x + 4$

$x = y + 4$

$x - 4 = y$

$f^{-1}(x) = \boxed{y = x - 4}$

36. (26, 37.79) (38, 41.39)



$$\frac{41.39 - 37.79}{38 - 26} = \frac{3.60}{12} = \$0.30 \text{ per minute}$$

$m = 0.3$

$37.79 = 0.3(26) + b$

$37.79 = 7.80 + b$

$-7.80 \quad -7.80$

$\$29.99 = b$

a) $y = 0.3x + \$29.99$

$C(x) = 0.3x + 29.99$

b) $C^{-1}(x) =$

$x = 0.3y + 29.99$

-29.99

$x - 29.99 = 0.3y$

$\frac{x - 29.99}{0.3} = y$

c) the additional minutes used

d) $y = 0.3x + 29.99$

$48.89 = 0.3x + 29.99$

$-29.99 \quad -29.99$

$\frac{18.90}{0.3} = \frac{0.3x}{0.3}$

$63 = x$

63 additional minutes

4-7 Inverse Functions

(x, y) inverse (y, x)

$(4, -10)$ $(-10, 4)$

$f(x)$ $f^{-1}(x)$

Inverse function

1.) replace $f(x)$ with y

2.) interchange the x and the y

3.) solve for y

4.) replace (rewrite) the equation $f^{-1}(x)$

$f(x) = 4x - 8$ 1. rewrite the function

$y = 4x - 8$ 2.) $y = x$

$x = 4y - 8$ 3.) change the x and y

$+8 \quad +8$

$x + 8 = 4y$ 4.) solve for x

$\frac{x+8}{4} = \frac{4}{4}y$

$\frac{1}{4}x + 2 = y$ 5.) rewrite as the inverse function

$y = \frac{1}{4}x + 2$

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

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#22)

$3y - 12x = -72$

$\frac{3y}{3} = \frac{12}{3}x - \frac{72}{3}$

$y = 4x - 24$ original equation in slope intercept form

$x = 4y - 24$ replace x and y

$\frac{x}{4} + \frac{24}{4} = \frac{4}{4}y$ solve for y

$\frac{1}{4}x + 6 = y$ rewrite as the inverse

$\boxed{f^{-1}(x) = \frac{1}{4}x + 6}$