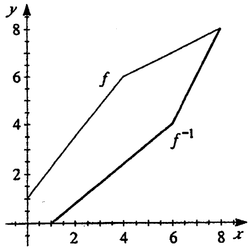
64. $k(x) = |x-3| = \begin{cases} -(x-3) & \text{if } x-3<0 \quad \Leftrightarrow \quad x<3 \\ x-3 & \text{if } x-3 \geq 0 \quad \Leftrightarrow \quad x \geq 3 \end{cases}$

If we restrict the domain of $k(x)$ to $[3, \infty)$, then $y = x - 3 \quad \Leftrightarrow \quad x = 3 + y$. So $k^{-1}(x) = 3 + x$. If we restrict the domain of $k(x)$ to $(-\infty, 3]$, then $y = -(x-3) \quad \Leftrightarrow \quad y = -x + 3 \quad \Leftrightarrow$ $x = 3 - y$. So $k^{-1}(x) = 3 - x$.

66. 

68. $f(x) = mx + b$. Notice that $f(x_1) = f(x_2) \quad \Leftrightarrow \quad mx_1 + b = mx_2 + b \quad \Leftrightarrow \quad mx_1 = mx_2$. We can conclude that $x_1 = x_2$ if and only if $m \neq 0$. Therefore f is one-to-one if and only if $m \neq 0$.

If $m \neq 0$, $f(x) = mx + b \quad \Leftrightarrow \quad y = mx + b \quad \Leftrightarrow \quad mx = y - b \quad \Leftrightarrow \quad x = \dfrac{y-b}{m}$. So,

$f^{-1}(x) = \dfrac{x-b}{m}$.

70. $f(I(x)) = f(x)$; therefore $f \circ I = f$. $I(f(x)) = f(x)$; therefore $I \circ f = f$.

By definition, $f \circ f^{-1}(x) = x = I(x)$; therefore $f \circ f^{-1} = I$. Similarly, $f^{-1} \circ f(x) = x = I(x)$; therefore $f^{-1} \circ f = I$.