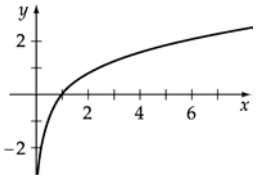
10. $\ln x = -3 \Rightarrow e^{-3} = x$

16. $2^x = y \Rightarrow \log_2 y = x$

22. $\log_{3/2} \frac{8}{27} = -3$ because $\left(\frac{3}{2}\right)^{-3} = \left(\frac{2}{3}\right)^3 = \frac{8}{27}$

38. $y = \log_{7/3} x$

$x = (7/3)^y$

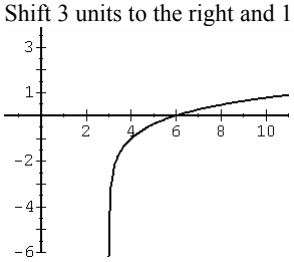


44. $J(x) = \ln\left(\frac{x-3}{x}\right)$

$\frac{x-3}{x} > 0$

The critical values are 3 and 0.
The quotient is positive.
$x < 0$ or $x > 3$
The domain is $(-\infty, 0) \cup (3, \infty)$.

56. Shift 3 units to the right and 1 unit down



58. The graph of $f(x) = \ln x + 3$ is the graph of $y = \ln x$ shifted 3 units up.

The graph of $g(x) = \ln(x - 3)$ is the graph of $y = \ln x$ shifted 3 units to the right.

The graph of $h(x) = \ln(3 - x)$ is the graph of $y = \ln x$ shifted 3 units to the left and reflected across the *y*-axis.

The graph of $k(x) = -\log_5(x + 3)$ is the graph of $y = \log_5 x$ reflected across the *x*-axis and shifted left 3 units.

a. $k(x)$ **b.** $h(x)$ **c.** $g(x)$ **d.** $f(x)$

79. The domain of the inverse is the range of the function.
Range of *f*: $\{y \mid -1 < y \leq 1\}$.
The domain of the function is the range of the inverse.
Range of *g*: all real numbers.