3.2 Logarithmic Functions and Their Graphs

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In exercises 33-36, simplify the expression.

P 33. $\log_{11} 11^7$

P 35. $\log_{\pi} \pi$

P 34. $\log_{3.2} 1$

P 36. $9^{\log_9 15}$

P 37. Find the domain, x-intercept, and vertical asymptote of the logarithmic function and sketch its graph.

$$f(x) = \log_4 x$$

P 42. Find the domain, x-intercept, and vertical asymptote of the logarithmic function and sketch its graph.

$$y = \log_5(x - 1) + 4$$

P 75. Find the domain, x-intercept, and vertical asymptote of the logarithmic function and sketch its graph.

$$f(x) = \ln(x - 4)$$

P 78. Find the domain, x-intercept, and vertical asymptote of the logarithmic function and sketch its graph.

$$f(x) = \ln(3 - x)$$

P 85. Solve

$$\log_5(x + 1) = \log_5 6.$$

P 91. Solve
$$\ln(x^2 - 2) = \ln 23.$$