**SKILLS** Objective B

In 1–5, evaluate without a calculator.

1. \( \ln e^{2.345} \)
2. \( e^{\ln e} \)
3. \( \ln e^{-8} \)
4. \( \ln 1 \)
5. \( \ln (e^{\ln(e + \ln 1)}) \)

**PROPERTIES** Objective E

6. True or False. For all \( x \geq 1 \), \( \log_2 x \geq \ln x \geq \log_3 x \).

7. What is the domain of the function \( h \), where \( h(x) = \ln \left(\frac{1}{3-x}\right) \)?

**USES** Objective I

8. A family has saved $22,000 to purchase a new car in four years. They expect the car to cost $24,750 at that time. The savings will be compounded continuously. What interest rate must they get for their savings to reach the amount they need?

**REPRESENTATIONS** Objective L

9. a. Use a graphing utility to graph \( f(x) = \frac{\ln x}{\ln 10} \).
   
   b. Use Part a to estimate \( f(1) \).

   c. Use Part a to estimate \( f(10) \).

   d. Graph \( g(x) = \log x \) on the same axes as Part a.

   e. How do the graphs of \( f \) and \( g \) compare?

   f. Evaluate \( g(1) \) and \( g(10) \).

   g. Use Parts a-f to make a conjecture about the relationship between \( f \) and \( g \).