

## Answer Key

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### Practice A

1.  $2 \log 2 \approx 0.602$    2.  $\log 7 + \log 2 \approx 1.146$   
3.  $\log 7 - \log 2 \approx 0.544$   
4.  $\log 2 - \log 7 \approx -0.544$   
5.  $-3 \log 7 \approx -2.535$    6.  $2 \log 7 \approx 1.69$   
7.  $\log_2 3 + \log_2 x$    8.  $2 + \log_3 x$   
9.  $\log x - \log 5$    10.  $1 - \log_6 x$    11.  $5 \log_3 x$   
12.  $-3 \ln x$    13.  $\frac{1}{3} \log x$    14.  $\frac{1}{2} + \frac{1}{2} \log_2 x$   
15.  $6 + 2 \log_3 x$    16.  $\log 15$    17.  $\log_2 7x$   
18.  $\log_3 14y$    19.  $\log\left(\frac{4}{x}\right)$    20.  $\ln\left(\frac{x}{3}\right)$   
21.  $\log\left(\frac{x-1}{6}\right)$    22.  $\ln\left(\frac{2}{x+2}\right)$   
23.  $\log_3(4x+20)$    24.  $\log 8x^2$   
25.  $\frac{\log 5}{\log 2} = \frac{\ln 5}{\ln 2} \approx 2.322$   
26.  $\frac{\log 10}{\log 7} = \frac{\ln 10}{\ln 7} \approx 1.183$   
27.  $\frac{\log 17}{\log 3} = \frac{\ln 17}{\ln 3} \approx 2.579$   
28.  $\frac{\log 200}{\log 6} = \frac{\ln 200}{\ln 6} \approx 2.957$   
29.  $\frac{\log\left(\frac{1}{2}\right)}{\log 5} = \frac{\ln\left(\frac{1}{2}\right)}{\ln 5} \approx -0.431$   
30.  $\frac{\log 1235}{\log 4} = \frac{\ln 1235}{\ln 4} \approx 5.135$   
31.  $t = \frac{\ln I - \ln I_0}{0.049}$    32. 

|   |      |      |      |
|---|------|------|------|
| I | 2000 | 3000 | 4000 |
| t | 14.1 | 22.4 | 28.3 |