

Ch. 6 Review – Part 2 (Sections 6.5-6.7)**6.5 Properties of Logarithms** (pp. 327–332)

#1-3: Expand the logarithmic expression.

1. $\log_8 3xy$

2. $\ln 6x^9$

3. $\log_3 \frac{10x^5}{y^2}$

#4-6: Condense the logarithmic expression.

4. $3\log_7 2 + \log_7 6$

5. $\frac{1}{2}\log_2 11 - 5\log_2 x$

6. $2\ln x + 5\ln 2 - \ln 3$

#7-10: Use $\log_3 2 \approx 0.631$ and $\log_3 5 \approx 1.465$ to evaluate the logarithm.

7. $\log_3 50$

8. $\log_3 \frac{5}{8}$

#13-14: Use the change-of-base formula to evaluate the logarithm. Round answer to three decimal places.

9. $\log_7 52$

10. $\log_{24} 15$

6.6**Solving Exponential and Logarithmic Equations** (pp. 333–340)

#11-12: Solve the exponential equation. For #16, round your answer to three decimal places.

11. $27^{x-2} = \left(\frac{1}{9}\right)^{x+1}$

12. $5^x = 8$

#13-14: Solve the logarithmic equation.

13. $\log_3(2x - 5) = 2$

14. $\log_2 x + \log_2(x - 6) = 4$

6.7**Modeling with Exponential and Logarithmic Functions** (pp. 341–348)

#15-17: Write an exponential function, $y=a(b)^x$, whose graph passes through the given points.

15. (2, 12) and (3, 24)

16. (1, 2) and (3, 50)

17. (3, 8) and (5, 2)