1. Rewrite as a log: $z^4 = m$	2. Rewrite as a log: $5^m = \frac{1}{625}$
3. Rewrite as a log: $\left(\frac{1}{4}\right)^{-3} = 64$	4. Rewrite as a log: $7^w = r$
5. Rewrite as an exponential $\log_6 t = -2$	6. Rewrite as an exponential $\log_5\left(\frac{1}{125}\right) = h$
7. Rewrite as an exponential $\log_3 243 = y$	8. Rewrite as an exponential $\log_p 343 = 3$
9. Expand $\log_5 7x\ y^3$	10. Expand $\log_2 \frac{k^3 p}{\sqrt{t}}$
11. Expand $\log_4 \frac{3d^5}{b^4 c^3}$	12. Expand $\ln y^4 \sqrt[3]{y+2}$

13. Condense

$\ln 4 + 3\ln a + 4\ln b$

14. Condense

$\log_3 b + 2\log_3 k + 3\log_3 m - 5\log_3 w$

15. Condense

$4\ln b - \ln 7 - \ln g - 5\ln j$

16. Condense

$\log_6 2 - \frac{1}{3}\log_6(x+3) - 4\log_6 y$

17. Solve: $2^{x+1} + 11 = 43$

18. Solve: $5^{x-2} = \frac{1}{625}$

19. Solve

$-3\left(2^x\right) = -336$

20. Solve

$\log_5(6x+1) = \log_5(3x+16)$

21. Solve

$-3e^{4x} - 7 = -40$

22. Solve

$11\left(4^{x+2}\right) - 18 = 1082$

23. Solve

$12 - 3\ln(2x) = 6$

24. Solve

$4\log_3(x-3) - 21 = -9$

25. Solve

$$\log_6 x + \log_6 (x+5) = 2$$

26. Solve

$$1296^{x-1} = 6^{x-1}$$

27. You purchase a car for $27,000. The value of the car decreases 10% each year.

a. Write the equation for the car's value in terms of the number of years since the purchase.

b. What is the value of the car after 4 years?

c. When will the car be worth half the original value?

28. The tuition at a private college in 2000 was $19,500. During the next 10 years, the tuition increased by an average of 4% each year.

a. Write a model for the tuition at the college since 2000.

b. What is the tuition in 2009 at this college?

c. What year will the tuition double?

29. You deposit $5100 in an account that earns 4.5% annual interest. Find the balance after 10 years if the interest is compounded:

a. Semi-Annually

b. Quarterly

c. Continuously

d. How long would it take to double your investment if it is compounded continuously?