Name _____ Class _____ Date _____

Practice 8-4

Example Exercises

Example 1

Simplify each expression.

1. 3^0 **2.** 6^0 **3.** -4^0 **4.** $(-9)^0$ **5.** 5.45^0

Evaluate each function for $t = 0$.

6. $f(t) = 75 \cdot 3^t$ **7.** $f(t) = 25 \cdot 7^t$ **8.** $f(t) = -6 \cdot 2.5^t$ **9.** $f(t) = 5.9 \cdot 10^t$

Example 2

Write each expression as a simple fraction.

10. 6^{-2} **11.** 5^{-4} **12.** 8^{-3} **13.** 10^{-2} **14.** 7^{-1}

15. 9^{-2} **16.** 8^{-1} **17.** $(-4)^{-2}$ **18.** $(-2)^{-2}$ **19.** $(-13)^{-1}$

20. -6^{-3} **21.** -3^{-2} **22.** 4^{-5} **23.** 11^{-2} **24.** -5^{-3}

Example 3

Rewrite each expression so that all exponents are positive.

25. $2x^{-3}$ **26.** $-4y^{-2}$ **27.** $6ab^{-2}$ **28.** $-3x^{-1}y$ **29.** $2v^{-2}w^{-3}$

30. $\frac{1}{x^{-4}}$ **31.** $\frac{3}{x^{-2}}$ **32.** $\frac{5}{st^{-2}}$ **33.** $\frac{6f}{g^{-1}}$ **34.** $\frac{-2k^3}{j^{-4}h^{-7}}$

35. $\frac{a^{-2}}{b^{-3}}$ **36.** $\frac{m^{-4}}{n^{-1}}$ **37.** $\frac{x^2y^{-3}}{z^{-5}}$ **38.** $\frac{4d^{-4}e^{-1}}{f^{-8}}$ **39.** $\frac{2}{a^2b^{-3}}$

Example 4

Use a graphing calculator to graph each function over the domain $\{-2 \le x \le 2\}$.

40. $y = 3^x$ **41.** $y = -3^x$ **42.** $y = \left(\frac{1}{3}\right)^x$ **43.** $y = -\left(\frac{1}{3}\right)^x$

44. $y = \left(\frac{3}{4}\right)^x$ **45.** $y = -\left(\frac{1}{2}\right)^x$ **46.** $y = \left(\frac{5}{2}\right)^x$ **47.** $y = -\left(\frac{3}{2}\right)^x$

48. $y = 2 \cdot 2^x$ **49.** $y = \frac{1}{2} \cdot 2^x$ **50.** $y = 2\left(\frac{1}{2}\right)^x$ **51.** $y = \frac{1}{4}\left(\frac{1}{2}\right)^x$

52. $y = 3 \cdot (1.5)^x$ **53.** $y = -2 \cdot (2.5)^x$ **54.** $y = 0.5 \cdot 4^x$ **55.** $y = 2.5 \cdot 2^x$