

HOMework: NATURAL LOG AND e

NAME: _____ DAY 3 DUE: _____

1. $(3e^{5x})^{-1}$	2. $e^x \cdot e^{-3x} \cdot e^4$
3. $\sqrt{9e^6}$	4. $e^x \cdot 5e^{x+3}$
5. $\frac{3e}{e^x}$	6. $\frac{4e^x}{e^{4x}}$
7. $\sqrt[3]{8e^{9x}}$	8. $\frac{6e^{4x}}{8e}$

Determine whether the function is an example of exponential growth or decay.

11. $f(x) = 3e^{-x}$ 12. $f(x) = \frac{1}{3}e^{4x}$ 13. $f(x) = e^{-4x}$ 14. $f(x) = \frac{3}{5}e^x$

20. You deposit \$2000 in an account that pays 4% annual interest compounded continuously. What is the balance after 5 years?

21. You deposit \$800 in an account that pays 2.65% annual interest compounded continuously. What is the balance after 12.5 years?

Inverse Functions Practice

Find the inverse of a **LOGARITHM FUNCTION**:

1. Switch the x and y.
2. Isolate the logarithm.
3. Convert to exponential form:

$$y = \log_b x \quad \Leftrightarrow \quad x = b^y$$

1. $y = 5\log_3(x-1)+10$	2. $y = -4\ln(x+2)+1$
3. $y = 2\log_6(x+4)$	4. $y = \log x + 3$
5. $y = \ln x - 1$	6. $y = 5\ln(x+1)+2$

Find the inverse of an **EXPONENTIAL FUNCTION**:

1. Switch the x and y.

2. Isolate the base and the exponent.

$$y = b^x \Leftrightarrow x = \log_b y$$

3. Convert to logarithmic form:

1. $y = 2(4)^{x+3} - 5$	2. $y = 4e^{x-1} + 8$
3. $y = 5^{x-3} + 6$	4. $y = 3 \cdot 2^x - 1$
5. $y = 4e^{x-3}$	6. $y = 10e^x + 5$

