

Ch. 6 Review – Part 1 (Sections 6.1-6.3)

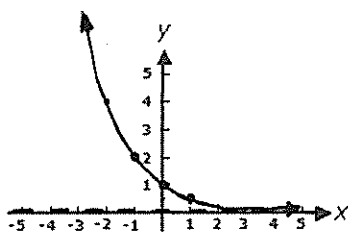
6.1 Exponential Growth and Decay Functions (pp. 295-302)

Tell whether the function represents exponential growth or exponential decay. Identify the percent increase or decrease. Then graph the function.

Include a minimum of three points and any asymptote.

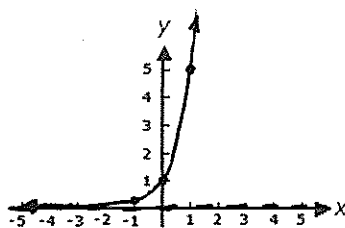
1. $f(x) = \left(\frac{1}{2}\right)^x$

decay
50% decrease



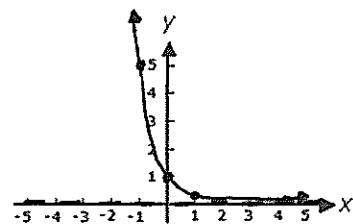
2. $y = 5^x$

growth
400% increase



3. $f(x) = (0.2)^x$

decay
80% decrease



4. You deposit \$1500 in an account that pays 7% annual interest. Find the balance after 2 years when the interest is compounded daily.

\$1725.39

6.2 The Natural Base e (pp. 303-308)

Simplify the expression.

5. $e^4 \cdot e^{11}$

e^{15}

6. $\frac{20e^3}{10e^6}$
 $\frac{2}{e^3}$

7. $(-3e^{-5x})^2$

$\frac{9}{e^{10x}}$

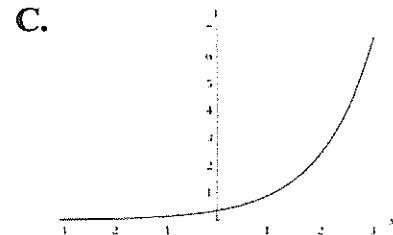
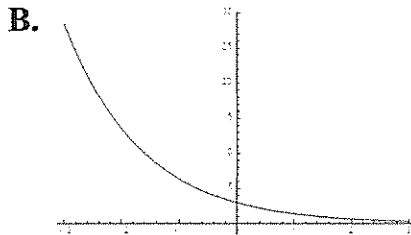
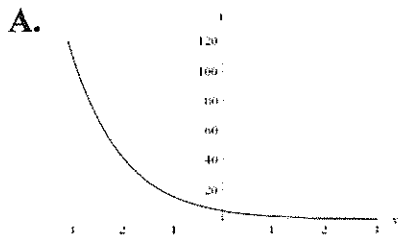
Tell whether the function represents exponential growth or exponential decay.

Then match the function with the correct graph.

8. $f(x) = \frac{1}{3}e^x$ growth
C

9. $y = 6e^{-x}$ decay
A

10. $y = 3e^{-0.75x}$ decay
B



6.3**Logarithms and Logarithmic Functions** (pp. 309–316)

Evaluate the logarithm.

11. $\log_2 8$

3

12. $\log_6 \frac{1}{36}$

-2

13. $\log_5 1$

0

Find the inverse of the function.

14. $f(x) = 8^x$

$$g(x) = \log_8 x$$

15. $y = \ln(x - 4)$

$$y = e^x + 4$$

16. $y = \log(x + 9)$

$$y = 10^x - 9$$

17. Graph $y = \log_{1/5} x$.

Include a minimum of three points and any asymptote.

