Concepts of Algebra 2 Notes   **Section 7-6: Natural Logarithms**

*Objectives:

*<u>natural logarithmic function</u>:

*Natural Logarithmic Function

Got It? **1.** What is each expression written as a single natural logarithm?

    a. $\ln 7 + 2 \ln 5$ **b.** $3 \ln x - 2 \ln 2x$ **c.** $3 \ln x + 2 \ln y + \ln 5$

Got It? **2.** What are the solutions of each equation? Check your answers.

    a. $\ln x = 2$ **b.** $\ln (3x + 5)^2 = 4$ **c.** $\ln 2x + \ln 3 = 2$

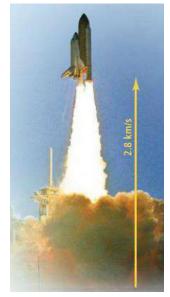**Got It?** **3.** What is the solution of each equation? Check your answers.

  a. $e^{x-2} = 12$ **b.** $2e^{-x} = 20$ **c.** $e^{3x} + 5 = 15$

Got It? **4. a.** A booster rocket for a spacecraft has a mass ratio of about 15, an exhaust velocity of 2.1 km/s, and a firing time of 30 s. Can the spacecraft achieve a stable orbit 300 km above Earth?

> **Space** A spacecraft can attain a stable orbit 300 km above Earth if it reaches a velocity of 7.7 km/s. The formula for a rocket's maximum velocity v in kilometers per second is $v = -0.0098t + c \ln R$. The booster rocket fires for t

2.8 km/s

Inclass: p. 481 #16, 26, 36, 38
Homework: p. 481 #11-39(odd)
Interactmath: #11, 12, 14, 21, 22, 29, 31, 33, 38