

Name \_\_\_\_\_

Homework 17  
Section 4.5

1. (5) Solve the equation  $3^x = 7^{x-2}$ . Give both the exact solution, and an approximation to the nearest 0.0001.

2. (5) Solve the equation  $\log_3(x - 2) + \log_3(x + 2) = \log_3(x + 26)$ .

3. (5) A yam which is initially at  $40^\circ\text{F}$  is placed in an oven which is at  $400^\circ\text{F}$ . The rate of change is known to be  $-0.24$ , when  $t$  is measured in hours. How long (to the nearest minute) will it take for the yam to reach a temperature of  $150^\circ\text{F}$ ? Recall, Newton's Law of Cooling is  $A(t) = C + (A_0 - C)e^{rt}$ .

4. (5) An investment offers 5% annual interest, compounded quarterly. If a deposit is made on January 1, 2013, in what year will the investment reach triple its initial value?