

Name:

Due Friday, November 7

Worksheet 3

1. Evaluate the following **without using a calculator**.

(a) $\log(10000) =$

(b) $\log(0.0001) =$

2. Solve for x:

(a) $3^x = 243$

(b) $1000 = 500 \cdot \left(1 + \frac{0.03}{12}\right)^{12 \cdot x}$

3. Jane owns a pastry shop in Oakland. She's sick of making her own tortes, so she bakes a pastry that can reproduce by parthenogenesis. She has 40 pastries today, and their population is increasing at a rate of 10% per hour. When she has 1,000,000 pastries, they will be able to take over the city.

(a) How long does it take the pastry population to double?

(b) How long does it take the pastries to take over the city?

