

Math 1010

March 8, 2017

Homework 21

Text problems:

6.2 # 25-43 odds, 51, 53, 57, 61, 63, 69

1) Solve for x.

$$2^{3x+1} = 8^{2x-3}$$

2) How much money is in an account after 20 years if \$4000 is invested initially at 5% APR compounded quarterly?

$$A = P \left(1 + \frac{r}{k} \right)^{kt}$$

3) How much money is in an account after 20 years if \$4000 is invested at 5% APR compounded continuously?

$$A = Pe^{rt}$$

$$Q(t) = q_0 e^{kt}$$

Q = amount after time t

q_0 = the initial amount at time t = 0

t = time elapsed from time t = 0

k = constant of growth (decay if k is negative)

3) A county population is projected to grow at 4% annually ($k = 0.04$). It is 120,000 in the year 2000. What is the projected population in 2006 ?

4) A radioactive isotope decays 25% each day ($k = -.25$). You have a gram of this isotope. How many grams of this isotope will you have left after one week?