

8) $A = A_0 e^{-.000121t}$
 $.20A_0 = A_0 e^{-.000121t}$
 $\frac{.20A_0}{A_0} = \frac{A_0 e^{-.000121t}}{A_0}$
 $.2 = e^{-.000121t}$
 $\ln(.2) = \ln e^{-.000121t}$
 $\ln(.2) = -.000121t$
 $\frac{\ln(.2)}{-.000121} = t$
 $t = 13301$

9) $A = A_0 e^{kt}$
 $\frac{1}{2}A_0 = A_0 e^{kt}$
 $\frac{\frac{1}{2}A_0}{A_0} = \frac{A_0 e^{kt}}{A_0}$
 $\frac{1}{2} = e^{kt}$
 $\frac{1}{2} = e^{-.052t}$
 $\ln\left(\frac{1}{2}\right) = \ln e^{-.052t}$

$\ln\left(\frac{1}{2}\right) = -.052t$
 $\frac{\ln\left(\frac{1}{2}\right)}{-.052} = t$

$13.3 = t$
 $A = A_0 e^{-.052(13.3)}$
 $A = A_0 e^{-.6916}$

10) $A = A_0 e^{kt}$
 $\frac{1}{2}A_0 = A_0 e^{kt}$
 $\frac{1}{2} = e^{kt}$
 $\frac{1}{2} = e^{k(4300)}$
 $\ln\left(\frac{1}{2}\right) = \ln e^{k(4300)}$

$\ln\left(\frac{1}{2}\right) = 4300k$
 $\frac{\ln\left(\frac{1}{2}\right)}{4300} = k$

$k = -.000161$

11)

$A = A_0 e^{kt}$
 $\frac{1}{2}A_0 = A_0 e^{kt}$
 $\frac{1}{2} = e^{kt}$
 $\frac{1}{2} = e^{k(200)}$
 $\ln\left(\frac{1}{2}\right) = \ln e^{k(200)}$
 $\ln\left(\frac{1}{2}\right) = 200k$
 $\frac{\ln\left(\frac{1}{2}\right)}{200} = k$

$k = -.003466$

"SAYS CONTINUOUS"

$A = Pe^{rt}$

"DOESN'T SAY CONTINUOUS"

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

A = ENDING AMT

P = PRINCIPLE

r = RATE (DECIMAL)

t = TIME (YEARS)

n = # OF TIMES COMPOUNDED PER YEAR

ANNUAL: n=1

SEMI-ANNUAL: n=2

QUARTERLY: n=4

MONTHLY: n=12

WEEKLY: n=52

DAILY: n=365