# Review for Test (8.1- 8.3)

1) Suppose you have an investment of $5500 earning an annual yield of 2.5%, compounded continuously. How much will you have after 8 more years?

2) The population of math teachers grows at a rate of 1.25% annually.
a. Write an exponential equation to represent this growth based an initial population of 300.

b. Find the population of math teachers in 10 years.

3) Graph $y = \log_4 (x + 1) - 3$     **you must be more accurate on graph!**
Where is asymptote?
Does the graph stop?
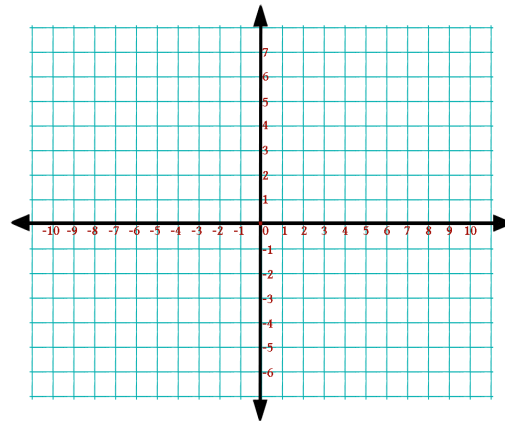
4) Write the equation for the exponential function that contains the following points. (-1,6) & (-2,12)

5) Mathtonium – 13 has a half life of 3.14 days.

a) Write the exponential decay function for a 25mg sample.

b) Find the amount remaining after 15 days.

# Review for Test (8.4- 8.6)

**6) Expand:**

a. $\log_4 \sqrt{4x^3}$

b. $\log_8\left(\dfrac{a}{b^4}\right)^5$

**7) Condense:**

a. $\ln x + \ln y - 4\ln z$

b. $3\log_9 2 - 2\log_9 5$

**8) Solve:**

a. $9^{5k} + 8 = 50$

b. $\log x + \log 8 = 1$

c. $\ln 2 - \ln(3x + 2) = 1$

d. $5 + e^{x+1} = 20$

**9) Simplify:** $\ln e^{15}$

**10) At what annual percent interest rate will $130 grow to $310 in 5 years, if interest is compounded continuously?**