Identify each function as either exponential growth or exponential decay. Identify the growth/decay factor, the % and the initial amount.

1. $y = 70(0.5)^x$

2. $y = 12(1.34)^x$

Write an exponential function to model each situation.
3. A population of 250 frogs increases at an annual rate of 22%.
   a. What is the growth factor?
   b. Write the exponential function.
   c. What is the number of frogs after 5 years?

4. A $17,500 delivery van depreciates 11% every year.
   a. What is the decay factor?
   b. Write the exponential function.
   c. What is the value of the van after 5 years?

Use the formulas to answer the following.
$A = P(1 + r/n)^{(nt)}$ $A = Pe^{rt}$

5. How much does a person need to deposit in their account so that after 6 years they have $5000 if the account pays an interest rate of 4% compounded daily?
6. How much does a person have in their account after 5 years if they deposited $2000 at an interest rate of 2.3% compounded continuously?

Describe the translation for each function. Graph the functions on graph paper. Draw and label the asymptote. Give the domain and range for each function.
7. $y = 1(2)^{x+3}$

8. $y = 3(2)^{x-2} + 4$

Use the exponential function $y = ab^x$
9. Which letter represents the initial amount?
10. Which letter represents the growth/decay factor?