Exponential growth and decay Test WARMUP.doc

1) Which of the exponential functions below show **growth** and which show **decay**?

a) $y = 100(1.7)^x$ b) $y = 10(1+0.12)^x$ c) $y = 8(0.4)^x$

2) A car was purchased for $20,000. The car depreciates by 22% of each year.

a) What is the value of the car when it is 12 years old?

b) How long will it take for the car to be worth less than $100?

3) There are 5,000 fish in the pond and the population is increasing by 2.1% each year.

a) Write an equation to determine the fish population after x years.

b) How many fish will there be in 1 year?

c) How many fish will there be in 15 years?

4) You invest $5,000 dollars in an account at 1.6% interest and interest is compounded quarterly (4 times a year).

a) Write an equation that shows the amount of money you have after x years.

b) How much money would you have after 15 years?

5) You invest $5,000 dollars in an account at 1.6% interest and interest is compounded annually (once a year).

a) Write an equation that shows the amount of money you have after x years.

b) How much money would you have after 15 years?

6) Simplify as much as possible the following expressions.

a) $\frac{x^2-4}{2} \times \frac{2x}{3x-6}$

b) $\frac{2x}{3}+\frac{4x}{5}$