DAY 4 – Solving Problems with Exponential Relations

1. Durham Region's Population, *P*, is projected to grow until 2031 based on the relation $P = 610\ 000(1.029)^n$, where *n* is the number of years after 1990.
   a. What does 610 000 represent?

   c. What is the projected population in 2010?

   b. What is the growth rate?

   d. What was the population in 1980?

2. A stamp has a current value of $1.50. The value is going to increase by 7% every year.
   a. Write an equation to model the relation.

   b. What was the value of the stamp 5 years ago?

   c. What is the value of the stamp in 10 years?

3. You purchased a 2010 Camaro for $35 000. The value of the Camaro decreases by 12% every year.
   a. Write an equation to model the relation.

   b. What is the value of the Camaro in 3 years?

   c. What is the value of the Camaro in 7 years?

4. You purchased a $500 Canada Savings Bond. It's value is going to increase by 3% every year.
    a. Write an equation to model the relation.

    b. What is the value of the bond in 10 years?   c. What is the value of the bond in 20 years?

5. The Beluga Whale is one of Canada's Endangered Species. It's current population is 1000 animals and it's projected to decrease by 5% every year.
    a. Write an equation to model the relation.
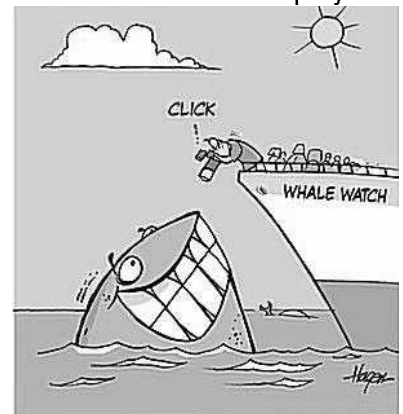
    b. What will the population be in 10 years?

                                                        c. What was the population 5 years ago?