**Applying Exponential Growth & Decay Rates -**

**1.** Each year the local country club sponsors a tennis tournament.  Play starts with 128 participants.  During each round, half of the players are eliminated.  How many players remain after 5 rounds? At what round the tournament can’t be played? **Chart the decay rate.**

**2.** In one locality, the *H1N1* flu (aka ‘*swine flu’*) spreads at the rate of 11.7% per day. Assume that the initial population affected the flu is 100.

A) Find the formula to estimate the flu growth rate.

B) Graph the growth rate using Excel.

C) How many will be affected after 7 days?

D) How many days will take for the affected population to double?

#### 3. A small town is in a population decline following the recent economic recession. The town manager has discovered that the town's population is decreasing exponentially at 6% annually. Based on this trend, the town population has decided that if the population falls to 1,000 or less, they cannot pay the town manager’s salary.

A) If the 2003 population is 12,345 people, at what point will the town have less than 1,000 people?

[Hint: use A = Pe-rt and solve for ‘t’].

B) Is the town manager’s job safe?