**Growth and Decay Problems /18**

**1.** (3 points) The population of wasp larvae doubles every 14 weeks. If the present population is 400 larvae, how big will the population be in a year?

**2.** (3 points) The population of werewolves in London decreases by 2% each year. If there will be 200 werewolves in 140 years, approximately how many werewolves are there now?

**3.** (3 points) The fungi population in the soccer captain’s cleats grows by 15% per week. When the population doubled, his mother finally made him clean them. How long did it take for the population to double?

**4.** (3 points) An experiment began with 110 mg of Mickelsonium 2000 and ended with 3 mg. If the experiment lasted 520 seconds, what is the half-life of Mickelsonium 2000?

**5.** (3 points) How many years are needed for $8000 invested at an annual interest rate of 6% compounded quarterly to yield $16,100? Answer in years and months.

**6.** (3 points) For every meter a diver descends below the water surface, the light intensity is reduced by 3.5%. At what depth is the light intensity only 30% of the surface?