**7-6 Homework: *Growth and Decay***

**1. DEPRECIATION** The value of a new plasma television depreciates by about 7% each year. Aeryn purchases a 50-inch plasma television for $3000. What is its value after 4 years? Round your answer to the nearest hundred.

**2. MONEY** Hans opens a savings account by depositing $1200 in an account that earns 3 percent interest compounded weekly. How much will his investment be worth in 10 years? Assume that there are exactly 52 weeks in a year and round your answer to the nearest cent.

**5. MEDICINE** When doctors prescribe medication,
they have to consider the rate at which the body filters a drug from the bloodstream. Suppose it takes the human body 6 days to filter out half of the Flu-B-Gone vaccine. The amount of Flu-B-Gone vaccine remaining in the bloodstream *x* days after an injection is given by the equation *y* = $y\_{0}(0.5) ^{\frac{x}{6}}$, where $y\_{0}$ is the initial amount. Suppose a doctor injects a patient with 20 *μ*g (micrograms) of Flu-B-Gone.

 **a.** How much of the vaccine will remain after 1 day? Round your answer to the nearest tenth.

 **b.** How much of the vaccine will remain after 12 days? Round your answer to the nearest tenth.

 **c.** After how many days will the amount of vaccine be less than 1 *μ*g?