

2.6 - Growth and Decay

1. A house that costs \$200,000 will appreciate in value by 3% each year. Find the value of the house at the end of ten years.

\$268,783.28

2. The most recent virus that is making people ill is a fast multiplying one. On the first day, only 2 virus "bugs" are present. Each day after, the amount of "bugs" triples. Find the amount of "bugs" present by the 5th day.

486 bugs

3. Tobias left a half-eaten banana under his bed. That night, two gnats came to visit the banana. Each night after, there were four times as many gnats. On what night will there be 120 gnats in his room?

3rd night

4. You drink a beverage with 120 mg of caffeine. Each hour, the caffeine in your system decreases by about 15%. How long until you have 10mg of caffeine in your system?

15.290 hours

5. The foundation of your house has about 1,200 termites. The termites grow at a rate of about 2.4% per day. How long until the number of termites has doubled?

29.226 days

6. Ian's new Mercedes cost him \$75,000. From the moment he drives it off the lot, it will depreciate in by 20% each year. When will the car with worth \$50,000?

1.817 years

7. In 1985, there were 285 cell phone subscribers in the small town of Centerville. The number of subscribers increased by 75% per year after 1985. How many cell phone subscribers were in Centerville in 1994?

43,872 subscribers

8. You have inherited land that was purchased in 1960. The value of the land increased by approximately 5% per year. What amount was the land purchased for if it is worth \$360,000 in the year 2011?

\$29,898.42