Geometric Growth and Decay Modeling

Directions: Use a geometric sequence to answer each question. State the common ratio when asked. Show all work.

1. A bacteria culture has 12 cells at the end of hour 1. The population triples each hour. Find the number of cells at the end of hour 5.

2. A population has 128 organisms at the end of year 1 and increases by 25% each year. State the common ratio and find the population at the end of year 4.

3. A medicine amount is 1600 mg at the end of hour 1. The amount decreases by 50% each hour. State the common ratio and find the amount at the end of hour 6.

4. A social media post has 16 shares at the end of day 1. The number of shares increases by 50% each day. State the common ratio and find the number of shares at the end of day 4.

5. A machine is worth 6250 at the end of year 1 and loses 20% of its value each year. State the common ratio and find its value at the end of year 4.

6. A rumor reaches 8 people in day 1. Each day, it reaches 5 times as many people as the day before. Find the number reached in day 4.

7. A sample has mass 810 grams at the end of day 1. Each day, one third of the sample is lost. State the common ratio and find the mass at the end of day 5.

8. A game prize starts at 64 points in level 1 and doubles each level. Find the points in level 7.