



Arithmetic and Geometric Sequence Word Problems

Arithmetic: $a_n = a_1 + (n-1)d$

Geometric: $a_n = a_1 r^{n-1}$

1. Edgar is getting better at math. On his first quiz he scored 57 points, then he scores 61 and 65 on his next two quizzes. If his scores continued to increase at the same rate, what will be his score on his 9th quiz? Show all work.
 - a. Write an explicit formula for the sequence. Explain where you found the numbers you are putting in the formula.
 - b. Identify the value of n and explain where you found it. Use the explicit formula to solve the problem.
 - c. Write your final answer as a sentence.

2. Suppose you drop a tennis ball from a height of 15 feet. After the ball hits the floor, it rebounds to 85% of its previous height. How high will the ball rebound after its third bounce? Round to the nearest tenth.
 - a. Write an explicit formula for the sequence. Explain where you found the numbers you are putting in the formula.
 - b. Identify the value of n and explain where you found it. Use the explicit formula to solve the problem.
 - c. Write your final answer as a sentence.

3. Viola makes gift baskets for Valentine's Day. She has 13 baskets left over from last year, and she plans to make 12 more each day. If there are 15 work days until the day she begins to sell the baskets, how many baskets will she have to sell?
 - a. Write an explicit formula for the sequence. Explain where you found the numbers you are putting in the formula.

b. Identify the value of n and explain where you found it. Use the explicit formula to solve the problem.

c. Write your final answer as a sentence.

4. In a certain region, the number of highway accidents increased by 20% over a four year period. How many accidents were there in 2006 if there were 5120 in 2002? Hint: When the percent increases, you want the original 100% plus the additional 20%.

a. Write an explicit formula for the sequence. Explain where you found the numbers you are putting in the formula.

b. Identify the value of n and explain where you found it. Use the explicit formula to solve the problem.

c. Write your final answer as a sentence.

5. A house worth \$350,000 when purchased was worth \$335,000 after the first year and \$320,000 after the second year. If the economy does not pick up and this trend continues, what will be the value of the house after 6 years.

a. Write an explicit formula for the sequence. Explain where you found the numbers you are putting in the formula.

b. Identify the value of n and explain where you found it. Use the explicit formula to solve the problem.

c. Write your final answer as a sentence.