**H. Algebra 2: Arithmetic Sequences**  Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hr:\_\_\_

Application Problems (4)

1. There is a set of steps leading up to a ship’s deck. The third step is 52 inches above the water. The fifth step is 63 inches above the water. Assume all steps have the same rise.
2. Write an explicit formula and a recursive formula for this situation.
3. How high is the ninth step above the water?
4. If there is a total of 16 steps, how high above the water is the deck of the ship?
5. A new football stadium is to be built in the shape of the Roman Coliseum. The bottom row will have 250 seats, and each row above the bottom row will have 40 seats more than the row in front of it. The design calls for 30 rows.
6. Write an explicit formula and a recursive formula for this situation.
7. How many seats will there be in row 30?
8. For the first game the fans seated in the first three rows are allowed to go on the field after the game. How many fans will be allowed on the field after the game?



1. Amelia has just graduated from college and is starting a new job. Her salary is based solely on commission. She hopes to earn $100.00 during her first week and then increase her salary by $20.00 per week. Amelia’s friend Marty earns a fixed salary of $600.00 per week.
2. Write an explicit formula and a recursive formula for Amelia’s weekly salary.
3. During which week does Amelia hope to earn $600.00?
4. What is Amelia’s average weekly salary for the year?

Formula: $Average=\frac{1st week salary+last week salary}{2}$

1. What is Amelia’s expected annual salary, assuming that she works all 52 weeks?
2. Which job would you rather have, Amelia’s or Marty’s. Explain.