

6. Label the following sequences as “arithmetic”, “geometric” or “neither”. (3 points)

a) 58, 48, 38, ... _____

b) 1, 1, 2, 3, 5, 8, ... _____

c) $\frac{1}{2}, \frac{1}{6}, \frac{1}{18}, \dots$ _____

7. Consider the sequence given by the following. (4 points)

$$a_n = 30 - 3n, \quad 1 \leq n \leq 3$$

a) Is this formula recursive or general? (Circle one.) recursive / general

b) Calculate all terms of this sequence. _____

8. Evaluate the following sum, if it exists. Show your work! (2 points)

$$\sum_{i=2}^{\infty} 8(-3)^i$$

9. Calculate the first three terms of the following sequence. (3 points)

$$\begin{cases} a_1 = 3 \\ a_n = (a_{n-1})^2 \text{ for } n \geq 2 \end{cases}$$

10. Write a recursive formula for the sequence defined below and draw a box around your answer. (2 points)

$$a_n = 7 \cdot 3^n \quad \text{for } n \geq 1$$

11. Calculate the sum of the odd numbers between 1000 and 5000. Be sure to show your work. (4 points)