University of Guyana
Faculty of Technology

EMT 121 - Problem Set II

February 11, 2011

1. Which of the following sequences are arithmetic? For those that are give a formula for the general (n^{th}) term.

   (a) 2,7,11,14, . . .

   (b) 2,7,12,17, . . .

   (c) 2,-5,-12,-19, . . .

   (d) 1,-1,2,-2, . . .

2. Which of the following sequences are geometric? For those that are give a formula for the general (n^{th}) term.

   (a) 4,12,36,108, . . .

   (b) 2,-4,8,-16, . . .

   (c) 4,1,$\frac{1}{4}$,$\frac{1}{8}$, . . .

3. A sequence a_n can be defined by a *recurrence relation*, which gives a_n in terms of the previous term , a_{n-1}, and the first term a_1. Find the first four terms of the following sequences and a formula for the general term.

   (a) $a_n = 2a_{n-1}$; $a_1 = 3$

   (b) $a_n = a_{n-1} + 5$; $a_1 = 2$

   (c) $a_n = -a_{n-1}$; $a_1 = 3$

4. An auditorium has 30 seats in the first row, 34 seats in the second row, 38 seats in the third row, and so on. If there are fifty rows in the auditorium , how many seats are there in the last row?