Math 200 - Quiz 3

September 15, 2010

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) The first term of an arithmetic sequence is 4, and the difference is 9.

   (a) Write out the first five terms of the sequence.

   4, 13, 22, 31, 40, ...

   (b) Find a formula for the nth term.

   N^{TH} TERM $= 9N - 5$

   (c) Use your formula to find the 1027th term of the sequence.

   1027^{TH} TERM $= 9(1027) - 5$

   $= 9238$

2. (1 point) What kind of sequence is this? Find a formula for the nth term.

   $2, 10, 50, 250, 1250, \ldots$

   THIS IS A GEOMETRIC SEQUENCE.

   N^{TH} TERM $= 2 \cdot 5^{N-1}$

3. (1 point) The first difference of a sequence is $3, 6, 9, 12, 15, \ldots$. Find the first five terms of the original sequence if the sum of its first two terms is 7.

   2, 5, 11, 20, 32

   3, 6, 9, 12

   FIRST TWO TERMS DIFFER BY 3 BUT HAVE A SUM OF 7.

   MUST BE 2 & 5.