Math 200 - Quiz 2

February 9, 2011

Name key

Score _____

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

1. (2 points) What kind of sequence is defined in the following table? Find a formula for the nth term of the sequence.

n	nth term
1	5
2	$10 = 5 \cdot 2$
3	$20 = 5 \cdot 2^2$
4	$40 = 5 \cdot 2^3$
5	$80 = 5 \cdot 2^4$

GEOMETRIC, WITH RATIO = 2

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

2. (1 point) What does it mean for a sequence to be defined recursively?

A SEQUENCE IS RECURSIVE IF IT IS DEFINED IN SUCH A WAY THAT YOU OBTAIN A TERM BY USING PREVIOUS TERMS. SEE #4 BELOW.

3. (1 point) Find the next term in the following sequence.

$4, 6, 13, 25, 42, \ldots$ 64

2 7 12 17 22

5 5 5 5

NEXT TERM IS 64.

4. (1 point) A sequence is defined as follows:

$$A_1 = 5 \quad \text{and} \quad A_n = n + A_{n-1} \text{ for } n = 2, 3, 4, \ldots$$

Find A_3.

$A_2 = 2 + A_1 = 7$

$A_3 = 3 + A_2 = 3 + 7 = 10$