MATH 1113 – Mathematics for General Education
Quiz 3
MW Due Mon. 19 Sept 2011
TR Due Tue. 20 Sept 2011

Instructions: Print out this page and turn it in at the beginning of class on the appropriate date above. Circle your final answers. Show all work. Answers with no work shown or illegible work will receive no credit.

1. Construct a difference table to find the next TWO numbers in the sequence below.

$$2 \qquad 5 \qquad 12 \qquad 23 \qquad 38 \qquad \underline{\quad} \qquad \underline{\quad}$$

2. Consider the generalized Fibonacci sequence described by:

$a_1 = 2$
$a_2 = 3$
$a_n = a_{n-1} + 3a_{n-2}$ for $n \geq 3$.

Determine the 3rd and 4th terms of this sequence.

3. Determine the ones digit of 2^{100}?
(Hint: Can you see a pattern in the following table?)
$2^1 = 2$
$2^2 = 4$
$2^3 = 8$
$2^4 = 16$
$2^5 = 32$
$2^6 = 64$
$2^7 = 128$
$2^8 = 256$
$2^9 = 512$

4. In a league of 9 football teams, each team plays every other team exactly once. How many league games will take place?

5. Consider the set of negative integers greater than or equal to -9.
Write this set using the Roster Method AND Set-Builder Notation. What is the cardinality of the set?