MATH 1030: Homework 1

due January 10, 2014

Instructions: Do the following problems on a separate sheet of paper. Show all of your work.

Problem 1

Come by my office in JWB 121 Loft before Friday afternoon. Find my cubicle (it's in the back) and sign the sheet of paper so I know you stopped by.

Problem 2

Get an appropriate scientific calculator for the quiz on Friday.

Problem 3

Five red, five green, and five blue marbles are placed in a jar. Explain your reasoning or you will not receive credit.

a) How many marbles must you remove (without looking) from the jar to be sure that you have at least one of each color?

b) How many marbles must you remove (still without looking) from the jar to be sure that you have two marbles of the same color?

Problem 4

Solve for x in each of the equations below. Be sure to check your answer.

a) $2x + 17 = 9x - 4$

b) $x^2 + 4x - 12 = 0$

c) $|x - 1| + 4 = 9$

Problem 5

Simplify the following expressions

a) $\dfrac{36p^5q^4}{9p^3q}$

b) $(2y^3 + 4y^3)^2 \cdot y^{-3}$

c) $(a^2b^{-5})^3 \cdot (ab^9)^0$

Problem 6

Solve the following word problems.

a) The length of a rectangle is 7 inches more than its width. The area of the rectangle is 78 square inches. Find the length and width of the rectangle.

b) Nick Andopolis has four times as many LPs as Ken Miller. Ken has 33 less LPs than Nick. How many LPs do each of them have?