Math 1050, Quiz #7, Spring 2014   Name ___KEY___

Instructions: Show all work. If you are using your calculator to solve, you may sketch a graph or indicate keys pressed to show work. Exact values: do not use decimals in your answers unless the problem begins with decimals, or is a word problem, or unless specifically asked to round. All answers should be fully reduced for full credit. Draw diagrams to help organize the data (this is worth partial credit). If you do your work on scrap paper, you should indicate that directly on the test paper along with your final answer. It is preferable, if you can, to do work directly on the quiz.

1. Simplify the following expressions. State the degree of the final polynomial.
   a. $(y^3 - 2y + 1) - (-3y^3 + y^2 + 5)$

   $y^3 - 2y + 1 + 3y^3 - y^2 - 5$

   $4y^3 - y^2 - 2y - 4$ degree 3

   b. $(-14xy + 3) + (x - y) + (3 - xy)$
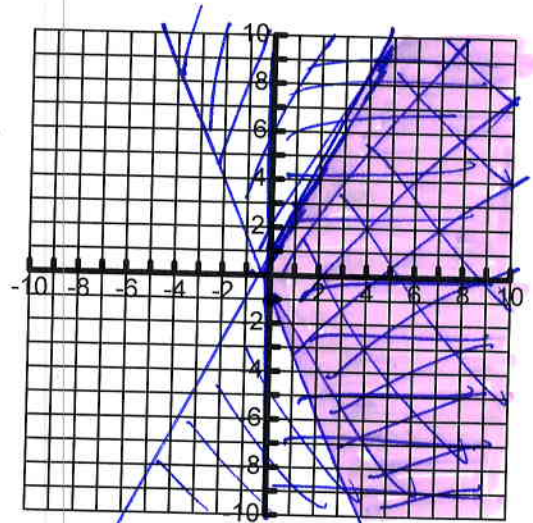
   $-14xy + 3 + x - y + 3 - xy$

   $-15xy + 6 + x - y$ degree 2

2. Graph the system of inequalities shown below on the graph. Label any points of intersection. Shade the region that satisfies the system.
   $$\begin{cases} 2x + 3y \geq -3 \\ y \leq 2x + 1 \\ x > 0 \end{cases}$$

3. Simplify. $(2a^5 b)^3 \cdot \left(\frac{3a^2 b^3}{4a}\right)^2$ Your final expression should have only positive exponents.

$$\frac{8a^{15}b^3 \cdot 9a^2 b^6}{16a^2} = \frac{9a^{17}b^9}{2}$$