Math 54 – Beginning Algebra – Chapters §8.3-9.2,9.6 Test – Spring '11 Name_____

Instructions: Write all your responses to the following on separate paper. Show your work for credit. Take as much space as you need. Do not crowd into corners. Do not use an electronic calculator.

1. Write each of the following in simplified radical form
   a. $\sqrt{\frac{1}{3}}$
   b. $\sqrt[3]{\frac{1}{4}}$

2. Show that $x = 2 - \sqrt{5}$ is a solution to $x^2 - 4x - 1 = 0$

3. Rationalize the denominator:
   a. $\frac{4}{2-\sqrt{3}}$
   b. $\frac{4}{\sqrt{2}-\sqrt{3}}$

4. Solve each equation. (If there is no solution, say so.)
   a. $\sqrt{2x}+1=5$
   b. $\sqrt{2x+1}=5$

5. Find all solutions to each equation and simplify.
   a. $(3x+1)^2 = 8$
   b. $\left(x-\frac{3}{7}\right)^2 = \frac{16}{49}$

6. Solve the equation by completing the square. Write the solutions in simplest radical form.
   a. $x^2+8x-7=0$
   b. $x^2 = \frac{1}{2} - 4x$

7. Make a table of values and graph the solution set to $y = (x+2)^2 - 3$ showing the vertex at 4 other points in the *x*-*y* coordinate plane.