College Algebra

Test 1

Form A

Spring 2015

Name: _____

Date: _____

<u>READ THESE INSTRUCTIONS CAREFULLY!</u>

- Circle or underline your final written answer.

- Justify your reasoning and show your work.

- If you run out of space, make a note and continue your work on the back of a page.

Algebra Facts

Quadratic Formula

If a, b, and c are real numbers and $a \neq 0$, then the solutions of the equation $ax^2 + bx + c = 0$ are

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

Absolute Value

- If $|E| = F$, then either $E = F$ or $E = -F$.

- If $|E| \leq F$, then both $E \leq F$ and $E \geq -F$.

- If $|E| \geq F$, then either $E \geq F$ or $E \leq -F$.

Solve the following equations.

1. $x^2 + 6x + 6 = 0$

2. $\dfrac{x}{x+3} + 5 = \dfrac{5}{x+3}$

3. $|8x - 4| + 13 = 13$

4. $x^2 - 6x + 5 = 0$

5. $|-3x - 2| + 8 = 27$

6. $3x^2 - x - 10 = 0$

7. $x^3 - 12x^2 + 35x = 0$

8. $|x^2 + 2x - 10| = 5$

Solve the following inequalities and graph your solutions. Give your answers in interval notation.

9 $|-5x + 6| + 9 < 10$

10 $2|-4x + 1| + 10 > 19$

Bonus. Solve. $2x^4 - 3x^2 + 1 = 0$