Be sure to follow College Algebra formatting guidelines in your work.

- 1. (5 pts) Solve the equation $\sqrt{7x} + x = 0$.
- 2. (5 pts) The equation $2(x-5)^2 13(x-5) 7 = 0$ is of quadratic type. Solve this equation by making a clever substitution.
- 3. (5 pts) Find all real solutions of the equation $x^5 18x^4 + 6x^3 = 0$.
- 4. (5 pts) Find all real solutions of the equation $2x^3 + 7x^2 8x 28 = 0$. This one factors by grouping.
- 5. (5 pts) Find all real solutions of the equation $\frac{x+6}{x^2+6} = \frac{2}{x+2}$.
- 6. (5 pts) Find all real solutions of the equation $\frac{x + \frac{4}{x}}{\frac{4}{x} + 5} = 2x$
- 7. (5 pts) Solve the inequality $\frac{x+6}{x^2+6} \ge \frac{2}{x+2}$. While the book way, with test values on intervals and endpoints works, we can often get these done more quickly, if we understand some general ideas and general considerations. See 1.8 Notes and 1.8 Videos. I suggest opening the Notes in one tab, and the Videos in the tab right next to it.
- 8. Solve the absolute value inequalities:

a. (5 pts)
$$|2x-3| > 7$$

b.
$$(5 \text{ pts}) |3x+8| \le 35$$

c. (5 pts)
$$|2x-3| > -7$$

d. (5 pts)
$$|3x+8| \le -35$$