

Name:

Quiz 3: §C.1-C.3

Complete the following problems to the best of your ability. **SHOW ALL OF YOUR WORK.** Unshown work will not be graded. You may use a calculator.

1. [30] Solve the following equations.

(a)  $x^2 = x + 6$

(b)  $x^4 = 16$

(c)  $2x - 3 = 15$

2. [20] Given the equation  $2x + 4t = 9 - 3t$ ,

(a) Solve for  $x$  in terms of  $t$ .

(b) Solve for  $t$  in terms of  $x$ .

3. [20] Consider the equation  $4x^2 = 10x - 4$ .
- (a) How many solutions does the equation have? How can you know this without actually solving the equation?
  - (b) Find the solutions to this equation, if it has any.
4. [30] Solve the following inequalities. Give your answer in **interval notation**.
- (a)  $-3 \leq -2x + 4 < 8$
  - (b)  $x^2 - 3x \geq 4$