Mathematics Practice Exam: Algebra

Instructions: Answer all questions to the best of your ability. Show your work for full credit where applicable.

Section 1: Multiple Choice (1 point each)

1. Simplify the expression: 3x + 5y - 2x + y

a) x + 6y   b) 5x + 4y   c) x + 4y   d) 5x + 6y

Answer: _____

2. Solve for x: 2(x + 3) = 10

a) x = 1   b) x = 2   c) x = 7   d) x = 13

Answer: _____

Section 2: Short Answer (2 points each)

3. Factor the following quadratic expression completely: x² - 9x + 18

Answer: _____

4. Solve the following system of equations:

2x + y = 7
x - y = 2

Answer: x = _____, y = _____

Section 3: Problem Solving (3 points)

5. A rectangular garden is 3 feet longer than it is wide. If the area of the garden is 70 square feet, what are the dimensions of the garden? Show your work.

Answer: Width = _____ feet, Length = _____ feet. Show your work below:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Answer Key:

1. a) x + 6y
2. b) x = 2
3. (x - 3)(x - 6)
4. x = 3, y = 1
5. Width = 7 feet, Length = 10 feet. (Work should show setting up a quadratic equation: w(w+3) = 70, solving for w, and then finding the length)