

# Practice Exam for Exam 4, Math 1111, Spring 2007

Print Your Name:

- (1) Graphic calculator is allowed.
- (2) In some problems you will need to circle more than one alternatives.
- (3) Some problems are not multiple choice.

1. Find all the  $x$ -value(s) of the solution of the following system.

$$\begin{cases} 6x + 2y = 7 \\ 2 - 3x = y. \end{cases}$$

- A)  $x = 1$       B)  $x = 2$       C)  $x = 3$       D)  $x = 4$       E) None of these

2. Find all the  $y$ -value(s) of the solution of the system in Problem 1.

- A)  $y = 1$       B)  $y = 2$       C)  $y = 3$       D)  $y = 4$       E) None of these

3. Find all the  $x$ -value(s) of the solution of the following system.

$$\begin{cases} 3x - 4y = 11 \\ 2x + 3y = -4. \end{cases}$$

- A)  $x = 1$       B)  $x = 2$       C)  $x = 3$       D)  $x = 4$       E) None of these

4. Find all the  $y$ -value(s) of the solution of the system in Problem 3.

- A)  $y = -2$       B)  $y = 2$       C)  $y = 3$       D)  $y = 4$       E) None of these

5. Find all the  $x$ -value(s) of the solution of the following system.

$$\begin{cases} x - 2y + 3z = 22 \\ 2x - 3y - z = 5 \\ 3x + y - 5z = -32. \end{cases}$$

- A)  $x = -1$       B)  $x = 2$       C)  $x = 3$       D)  $x = 4$       E) None of these

6. Find all the  $y$ -value(s) of the solution of the system in Problem 5.

- A)  $y = -4$       B)  $y = 2$       C)  $y = 3$       D)  $y = 4$       E) None of these

7. Find all the  $z$ -value(s) of the solution of the system in Problem 5.

- A)  $z = 5$       B)  $z = 2$       C)  $z = 3$       D)  $z = 4$       E) None of these

8. Find all the  $x$ -value(s) of the solution of the following system.

$$\begin{cases} x^2 - 4y^2 = -7 \\ 3x^2 + y^2 = 31. \end{cases}$$

- A)  $x = -3$       B)  $x = 2$       C)  $x = 3$       D)  $x = 4$       E) None of these

9. Find all the  $y$ -value(s) of the solution of the system in Problem 8.

- A)  $y = -2$       B)  $y = 2$       C)  $y = 3$       D)  $y = 4$       E) None of these

10. Find all the  $x$ -value(s) of the solution of the following system.

$$\begin{cases} xy = -12 \\ x - 2y = -14. \end{cases}$$

- A)  $x = -2$       B)  $x = -12$       C)  $x = 3$       D)  $x = 4$       E) None of these

11. Find all the  $y$ -value(s) of the solution of the system in Problem 10.

- A)  $y = 1$       B)  $y = 6$       C)  $y = 3$       D)  $y = 4$       E) None of these

12. (10 points) Solve the following system of equations by the method of your choice.

$$\begin{cases} x^2 + y^2 = 5 \\ 3x - y = 5. \end{cases}$$

13. (10 points) Solve the following system of equations by substitution.

$$\begin{cases} x - 2y = 9 \\ 2x + y = 3. \end{cases}$$

14. (10 points) Solve the following system of equations by addition method.

$$\begin{cases} x + 2y = 9 \\ 2x + y = 3. \end{cases}$$

15. (15 points) Solve the following system of equations by the method of your choice.

$$\begin{cases} x + 3y + 5z = 20 \\ y - 4z = -16 \\ 3x - 2y + 9z = 36. \end{cases}$$

16. Solve the following system of equations by the method of your choice.

$$\begin{cases} x - y = 3 \\ (x - 2)^2 + (y + 3)^2 = 4. \end{cases}$$

17. Solve the following system of equations by the method of your choice.

$$\begin{cases} x^2 = 2y + 10 \\ 3x - y = 9. \end{cases}$$

**Answers:** Let the instructor know if you find wrong answers.

Problems 1-2: No solution to the system.

Problems 3-4:  $(1, -2)$

Problems 5-7:  $(-1, -4, 5)$

Problems 8-9:  $(3, 2), (3, -2), (-3, 2), (-3, -2)$

Problems 10-11:  $(-2, 6), (-12, 1)$

Problem 12:  $(2, 1), (1, -2)$

Problem 13:  $(3, -3)$

Problem 14:  $(-1, 5)$

Problem 15:  $(0, 0, 4)$

Problem 16:  $(0, -3), (2, -1)$

Problem 17:  $(4, 3), (2, -3)$