# Test #5: Chapter 9
# Mth 164-280

Name: _____

## Important Dates/Times: <u>Turn This Test in By-</u>

Saturday, 11:00AM, 04/24/10 = 10 point bonus
Tuesday, 7:00PM, 04/27/10 = as graded
Wednesday, 10:00AM, 04/28/10 = max(25 point penalty, 0 grade)
Thursday, 10:00AM, 04/29/10 = max(50 point penalty, 0 grade)
Friday, 10:00AM, 04/30/10 = max(75 point penalty, 0 grade)
Any Date Later = 0 grade

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**Instructions:** Print this test from the PDF file on Blackboard. Show all work on these pages. You may use the back of the pages, if necessary. Put <u>only</u> the answers in the answer block(s) if provided.

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1. Solve the system of equations. Mark the appropriate box that defines this system of equations. If the system of equations is dependent, then set one of the variables equal to the real number $c$, and express the other variables in terms of $c$. Show all of your work.

$$\begin{cases} y = 5x + 4 \\ 3y + x = -4 \end{cases}$$

| Check the box that defines this system of equations | |
| --- | --- |
| | Independent |
| | Dependent |
| | Inconsistent |

Answer(s) for an independent or dependent system of equations:

2. Solve the system of equations.  Mark the appropriate box that defines this system of equations.  If the system of equations is dependent, then set one of the variables equal to the real number $c$, and express the other variables in terms of $c$.  Show all of your work.

$$\begin{cases} x + 3y - z = -9 \\ 2x + y + 2z = 8 \\ x - y + 5z = 23 \end{cases}$$

| Check the box that defines this system of equations | |
| --- | --- |
| | Independent |
| | Dependent |
| | Inconsistent |

Answer(s) for an independent or dependent system of equations:

3. Solve the system of equations. Mark the appropriate box that defines this system of equations. If the system of equations is dependent, then set one of the variables equal to the real number $c$, and express the other variables in terms of $c$. Show all of your work.

$$\begin{cases} x - 2y + z = 5 \\ 2x + 3y - 2z = -8 \\ x + 5y - 3z = 7 \end{cases}$$

| Check the box that defines this system of equations | |
|---|---|
| | Independent |
| | Dependent |
| | Inconsistent |

Answer(s) for an independent or dependent system of equations:

4. Solve the system of equations. Mark the appropriate box that defines this system of equations. If the system of equations is dependent, then set one of the variables equal to the real number $c$, and express the other variables in terms of $c$. Show all of your work.

$$\begin{cases} y = x^2 + 3x - 5 \\ y = 2x + 1 \end{cases}$$

| Check the box that defines this system of equations | |
| --- | --- |
| | Independent |
| | Dependent |
| | Inconsistent |

Answer(s) for an independent or dependent system of equations:

5.  Solve the system of equations.  Mark the appropriate box that defines this system of equations.  If the system of equations is dependent, then set one of the variables equal to the real number $c$, and express the other variables in terms of $c$.  Show all of your work.

$$\begin{cases} x^2 - 25y^2 = 25 \\ \quad x^2 + y^2 = 25 \end{cases}$$

| Check the box that defines this system of equations | |
| --- | --- |
| | Independent |
| | Dependent |
| | Inconsistent |

Answer(s) for an independent or dependent system of equations:

6. Solve the system of equations. Mark the appropriate box that defines this system of equations. If the system of equations is dependent, then set one of the variables equal to the real number $c$, and express the other variables in terms of $c$. Show all of your work.

$$\begin{cases} x + 2y + z = 4 \\ 3x + 3y - 2z = 6 \end{cases}$$

| Check the box that defines this system of equations | |
|---|---|
| | Independent |
| | Dependent |
| | Inconsistent |

Answer(s) for an independent or dependent system of equations:

7. A motorboat traveled a distance of 48 miles in 2 hours while traveling with the current. Against the current, the same trip took 3 hours. Find the rate of the motorboat in calm water and the rate of the current.

| | |
|---|---|
| | Rate of the motorboat |
| | Rate of the current |

8. A chemist has two salt solutions.  One solution is 20% salt and the other is 45% salt.
   How many liters of each must be used to produce 100 liters of a solution that is 30% salt.

| | |
|---|---|
| | Liters of 20% salt solution |
| | Liters of 45% salt solution |