**Algebra 2**                                     Name _____
**3-5 Systems with Three Variables**          Date _____ **A#9**

**Goal:** To solve systems in three variables.

**I. Review:** List the steps of each method for solving a system of linear equations.

| Graphing | Substitution | Elimination |
|---|---|---|
| 1. G | 1. S | 1. M |
| 2. E | 2. S | 2. A |
|  |  | 3. S |
| 3. C | 3. S | 4. S |
|  | 4. C | 5. C |

**II. Solving a System Using Elimination**: What is the solution of the system?

1) $3x + 2y + 4z = 11$
2) $2x - y + 3z = 4$
3) $5x - 3y + 5z = -1$

**Practice:** What is the solution of the system?

$$\begin{cases} 2a + b + c = 9 \\ a + 2b + c = 8 \\ a + b + 2c = 11 \end{cases}$$

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**III. Solving the System by Substitution:** What is the solution to the system?

$$\begin{cases} 3x + 2y + 4z = 11 \\ 2x - y + 3z = 4 \\ 5x - 3y + 5z = -1 \end{cases}$$

**Practice:** What is the solution of the system?

$$\begin{cases} 3x + 2y - z = 12 \\ -4x + y - 2z = 4 \\ x - 3y + z = -4 \end{cases}$$