Handout 4- Solving Systems in Three Variables

Solve the following linear systems algebraically.

$$x + y + z = 1$$

1. $2x + y + 2z = 2$
 $3x + y + z = 3$

$$6x - 3y - 3z = 6$$
6.
$$2x - y - 2z = 4$$

$$3x - 2y - z = 6$$

$$\begin{array}{rcl}
x + y & = & 1 \\
2. & 2x - 2y - z & = & 1 \\
x - y - z & = & -2
\end{array}$$

$$\begin{array}{rcl}
-6x + 3y - 3z & = & 3 \\
7. & -2x - y - 2z & = & 2 \\
-3x + 2y - z & = & 3
\end{array}$$

$$3. \quad 3x - 2y - z = 1 x + y + z = 1$$

$$\begin{array}{rcl}
-6x + 3y + 2z & = & 3 \\
8. & -x + y & = & 2 \\
x + 2y - z & = & 1
\end{array}$$

$$\begin{array}{rcl} 2x + y + z & = & 5 \\ 4. & x + 2y - z & = & 4 \\ & x + y + z & = & 3 \end{array}$$

$$\begin{array}{rcl}
2x + y - 2z & = & 2 \\
9. & -x + y + 2z & = & 2 \\
2x + 2y - z & = & 2
\end{array}$$

$$\begin{array}{rcl}
 6x - 4y + 4z & = & 6 \\
 5. & 2x + 2y + 4z & = & 4 \\
 & 2x + 4z & = & 6
 \end{array}$$

$$6x + 3y - 3z = 6
10. -2x + 2y + z = 1
4x + 4y - z = 4$$

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