## Handout 4- Solving Systems in Three Variables - Answers

Solve the following linear systems algebraically.

$$\begin{array}{rcl}
 x + y + z & = & 1 \\
 1. & 2x + y + 2z & = & 2 \\
 3x + y + z & = & 3 \\
 (1, 0, 0)
 \end{array}$$

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

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

$$(-4, -8, -2)$$

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

$$(2, -1, 5)$$

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

$$(-6, -4, 7)$$

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

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

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

$$(2, 1, 0)$$

$$\begin{array}{rcl}
2x + y - 2z & = & 2 \\
9. & -x + y + 2z & = & 2 \\
2x + 2y - z & = & 2 \\
(-8, 6, -6)
\end{array}$$

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

$$(-1, -1, 2)$$

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

$$10. \quad -2x + 2y + z = 1$$

$$4x + 4y - z = 4$$

$$(-0.5, 1, -2)$$

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