Handout 4- Solving Systems in Three Variables - Answers

Solve the following linear systems algebraically.

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

$(1, 0, 0)$

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

$(2, -1, 5)$

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

$(-1, -6, 8)$

4.
$$2x + y + z = 5$$
$$x + 2y - z = 4$$
$$x + y + z = 3$$

$(2, 1, 0)$

5.
$$6x - 4y + 4z = 6$$
$$2x + 2y + 4z = 4$$
$$2x + 4z = 6$$

$(-1, -1, 2)$

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

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

7.
$$-6x + 3y - 3z = 3$$
$$-2x - y - 2z = 2$$
$$-3x + 2y - z = 3$$

$(-6, -4, 7)$

8.
$$-6x + 3y + 2z = 3$$
$$-x + y = 2$$
$$x + 2y - z = 1$$

$(-3, -1, -6)$

9.
$$2x + y - 2z = 2$$
$$-x + y + 2z = 2$$
$$2x + 2y - z = 2$$

$(-8, 6, -6)$

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

$(-0.5, 1, -2)$