Systems of Equations: Compare and Contrast

Small Group Directions

1. Solve your assigned system of equations using any algebraic method. Show you work and be ready to explain how you solved it.

2. Also graph the system of equations and show how the solution appears on your graph. You may use graphing technology such as Desmos.

Group Roles

Facilitator: Read the directions out loud and check whether everyone understands each other. *"How should we start?" "How do you know?"*
Team Captain: Help your team members step up and step back. *"How do you know?" "What do you think?"*
Resource Manager: Help your group get unstuck. *"Is this working?" "What else could we try?" "Should we ask a team question?"*
Recorder/Reporter: Be prepared to share out in the whole class discussion. *"How should I explain...?"*

Problems

1. $$y = -3x4x + y = 2$$

2. $$y = 7x - 52x + y = 13$$

3. $$x = -5y - 4x - 4y = 23$$

4. $$x + y = 10y = x - 4$$

5. $$y = 5 - x4x + 2y = 10$$

6. $$3x + 5y = 23y = x + 3$$

7. $$y = -x - 22x + 3y = -9$$

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

9. $$x = \frac{1}{2}y + \frac{1}{2}2x + y = -1$$

10.
$$a = 2b + 4b - 2a = 16$$

11.
$$y = 3 - 2x4x + 2y = 6$$

12.
$$y = x + 1x - y = 1$$

(Adapted from CPM *Core Connections*)

Whole Class Directions

1. Each group will share out how you solved your system of equations.
2. Listen to each group and think about similarities and differences.
3. Ask questions about anything you do not understand or you disagree with.
4. You do not need to write anything during the whole class discussion, but you will have an exit ticket to see what you learned from the discussion.

Exit Ticket: Systems of Equations Compare and Contrast

Sheila missed class today. She tried to solve Problem 8 on her own, but she thinks she made a mistake because -3 does not equal 1.

$$y = 2x - 3 \quad (1)$$
$$-2x + y = 1 \quad (2)$$

$$-2x + (2x - 3) = 1 \quad (3)$$
$$-2x + 2x - 3 = 1 \quad (4)$$
$$0 - 3 = 1 \quad (5)$$
$$-3 = 1 \quad (6)$$

Explain to Sheila what happened, using as much detail as possible to help her understand this type of problem.