

## Summarize

continued

It is important to create a permanent record of students' ideas. Students should be able to refer back to these ideas when they practice their new algorithms. To this end, you could write up students' ideas on poster paper to be displayed in the room. Or write the ideas on the board and have students copy them in their notebooks.

### ACE Assignment Guide for Problem 4.2



Core 8–14

Other 38–46, 62, and unassigned choices from previous problems

**Adapted** For suggestions about adapting ACE exercises, see the *CMP Special Needs Handbook*.

**Connecting to Prior Units** 38–43: *Moving Straight Ahead*

### Answers to Problem 4.2

A. Students will choose their forms differently.

Both forms are offered as answers here.

$$\begin{aligned} 1. \quad y &= -x + 3 \\ x &= -y + 3 \end{aligned}$$

$$\begin{aligned} 2. \quad y &= x + 5 \\ x &= y - 5 \end{aligned}$$

$$\begin{aligned} 3. \quad y &= -2x - 1 \\ x &= -\frac{1}{2}y - \frac{1}{2} \end{aligned}$$

$$\begin{aligned} 4. \quad y &= \frac{1}{2}x - 4 \\ x &= 2y + 8 \end{aligned}$$

$$\begin{aligned} 5. \quad y &= -\frac{3}{2}x + 2 \\ x &= -\frac{2}{3}y + \frac{4}{3} \end{aligned}$$

$$\begin{aligned} 6. \quad y &= \frac{1}{4}x + \frac{5}{2} \\ x &= 4y - 10 \end{aligned}$$

7. Usually students prefer to avoid the fractions created when dividing is necessary to make the coefficient of  $x$  (or  $y$ ) equal to 1. They may say they prefer to isolate the variable whose coefficient is 1 or  $-1$ , if that is possible.

B. 1.  $x = -1, y = 4$

2.  $x = 11, y = 3$

3.  $x = 3, y = 2$

4. Infinitely many solutions; equations are equivalent.

C. 1. Solving both equations for the same variable in terms of the other variable is particularly efficient when the coefficients of one variable are both 1 or  $-1$ , or if one of the equations is already in the desired form.

2. Solve each equation for either  $x$  or  $y$ . Then use the equality of the two expressions created ( $x =$  expression in terms of  $y$ , for example) to make an equation in one variable. Solve this equation and substitute your solution back into either of the original equations to find the other variable.

D. 1. Two equations are equivalent if they have the same solutions.

2. Solving a system of linear equations means finding a solution that is common to both equations in the system.