Day 4 – Solving Systems Using Elimination (Adding) – Practice

Using the graphic organizer on page 143, answer the following questions:

a. If two lines are parallel, what do you know about their slopes? same

b. If two lines create an infinite amount of solutions, what do you know about their equations? equations are true (3=3) ex.

c. If you solve an equation by substitution or elimination and your equation is true, what is your conclusion about the number of solutions? Infinite Solutions

d. If you solve an equation by substitution or elimination and your equation is false, what is your conclusion about the number of solutions? No Solutions

e. Give an example of an equation that would be concluded as having no solutions when solved by substitution. $3 \neq 7$

f. Give an example of an equation that would be concluded as having infinite solutions when solved by elimination. $0 = 0$

Directions: Solve each system using elimination. Write your solution as an ordered pair unless the system has no or infinite solutions.

1. $-4x - 2y = -12$
   $4x + 8y = -24$

$6y = -36$

$y = -6$

$4x + 8(-6) = -24$

$4x - 48 = -24$

$4x = 24$

$x = 6$

Solution: $(6, -6)$

2. $4x + 8y = 20$
   $-4x + 2y = -30$

$10y = -10$

$y = -1$

$4x + 8(-1) = 20$

$4x - 8 = 20$

$4x = 28$

$x = 7$

Solution: $(7, -1)$

3. $x - y = 11$
$2x + y = 19$

$3x = 30$
$x = 10$

$2(10) + y = 19$
$20 + y = 19$
$y = -1$

Solution: $(10, -1)$

4. $5y = 1 + 6x$
$-6x \quad -6x$
$6x + 4y = -10$

$-6x + 5y = 1$
$6x + 4y = -10$
$9y = -9$
$y = -1$

$6x + 4(-1) = -10$
$6x - 4 = -10$
$6x = -6$
$x = -1$

Solution: $(-1, -1)$

5. $-3x + 5y = 7$
$3x - 5y = 7$

$0 = 0$

Solution: Infinite Solutions

6. $6x - 18 = 12y$
$+18 \quad +18$
$6x = 12y - 16$

$6x = 12y + 18$
$6x = 12y - 16$
$0 \neq 2$

Solution: No Solution