3.2 Part 2 The Elimination Method

The purpose of the elimination method (also called the linear combination method) is to eliminate one of the variables.

> How can we eliminate variables? Adding opposites

1.
$$4x + 2y = 2$$

 $+ 3x + 2y = 12$
 $7x + 3x + 2y = 12$
 $7x + 2y = -4$
 $+ 3x + 3y = 19$
 $7x + 2y = -4$
 $+ 3x + 3y = 19$
 $5y = 15$
 $5x + 2y = -4$
 $+ 3x + 3y = 19$
 $5y = 15$
 $5x + 2y = -4$
 $+ 3x + 3y = 19$
 $5x + 2y = -4$
 $+ 3x + 3y = 19$
 $5x + 2y = -4$
 $+ 3x + 3y = 19$
 $5x + 2y = -4$
 $+ 3x + 3y = 19$
 $5x + 2y = -4$
 $5x + 3y = 19$
 $5x + 2y = -4$
 $5x + 2y = -4$
 $5x + 3y = 19$
 $5x + 2y = -4$
 $5x + 3y = 19$
 $5x + 2y = -4$
 $5x + 2y = -2$
 $5x + 2y = -2$
 $5x + 2y = -2$

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3.
$$2(2x - 3y = 4)$$

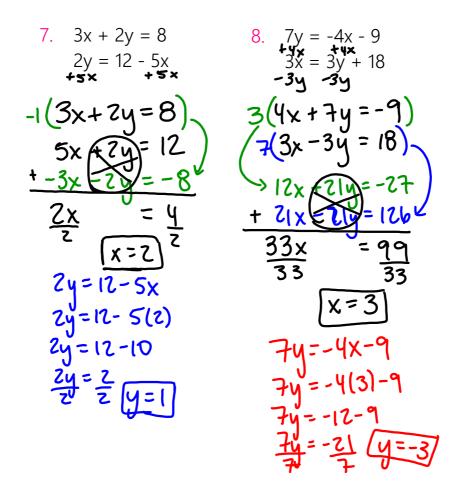
 $4x + 5y = -8$
 $-1y = 0$
 $-1y = 0$
 $-1y = -1$
 $y = 0$
 $-1y = -15$
 $0 = 0$
Infinite
Solutions

5.
$$z(-3x + 2y = 7)$$

 $(-3x + 2y = 7)$
 $(-3x + 2y = 7)$
 $(-3x + 2y = 7)$
 $(-3x + 2y = 6)$
 $(-4x + 2y = 5)$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x + 3) = 5$
 $(-4x + 2) = 1$
 $(-4x$

2

3.2 Part 2 The Elimination Method



9. Elise purchases shirts for \$28 and skirts for \$15. If she spends a total of \$131 and buys a total of 7 items, how many of each did she purchase? Define the variables, write a system of equations and solve.

10. A fruit company plans to make 13.25 lb gift boxes of oranges and grapefruits. Each box is to have a retail value of \$21. Each orange weighs 0.50 lb and has a retail value of \$0.75, while each grapefruit weighs 0.75 lb and has a retail value of \$1.25. How many oranges and grapefruits should be included in each box? Define the variables, write a system of equations and solve.