CHAPTER 7: SYSTEMS OF EQUATIONS & INEQUALITIES

Section 2 - Solving Systems by Substitution

OBJECTIVES

- I can solve systems of equations by substitution
- I can analyze special types of systems of equations

NOTES
PART 1: SYSTEMS OF LINEAR EQUATIONS

REMEMBER:

Three possible SOLUTIONS to a System of Linear Equations:

1) One solution- an ordered pair that makes both equations true
2) Infinitely many solutions- the system contains the same line.
3) No solutions- the lines are parallel and never will cross.

Three METHODS to solve a System of Linear Equations:

1) Graphing
2) Solving by Substitution
3) Solving by Elimination

PART 2: SOLVING SYSTEMS BY SUBSTITUTION

Steps to Solving by Substitution

Step 1: Solve one equation for ____ or ____.

Step 2: _____ this expression into the other equation and _____ for the variable.

Step 3: _____ your answer into the revised equation from Step 1 and _____ for the other variable.

PART 2: SOLVING SYSTEMS BY SUBSTITUTION

Solve the systems by substitution. CHECK YOUR SOLUTION!!!

$$\begin{cases} y = 2x \\ 7x - y = 15 \end{cases}$$

$$\begin{cases} y = -4x + 8 \\ y = x + 7 \end{cases}$$

PART 2: SOLVING SYSTEMS BY SUBSTITUTION

Solve the systems by substitution. CHECK YOUR SOLUTION!!!

$$\begin{cases} 3y + 2x = 4 \\ -6x + y = -7 \end{cases}$$

$$\begin{cases} c = 3d - 27 \\ 4d + 10c = 120 \end{cases}$$

PART 2: SOLVING SYSTEMS BY SUBSTITUTION

Solve the systems by substitution. CHECK YOUR SOLUTION!!!

$$\begin{cases} 4x - 2y = 8 \\ y = 2x + 3 \end{cases}$$

$$\begin{cases} y = -\frac{1}{2}x + 5 \\ x + 2y = 10 \end{cases}$$

CAN YOU?? PROVE IT!!

- I can solve systems of equations by substitution
- I can analyze special types of systems of equations

Solve the system by substitution. CHECK YOUR SOLUTION!!!

$$\begin{cases} 3x + y = 8 \\ y = \frac{1}{2}x + 1 \end{cases}$$