Today's Plan:

Learning Target (standard): I will solve systems of equations using the graphing method.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

p.469 #2-16 even

2) $independent(-1,2)$

4) $independent(2,-1)$

6) $independent(4,4)$

8) $independent(-2,1)$

10) $independent(-3,-2)$

12) $inconsistent$ no solution

14) $dependent$ infinite solutions

16) $independent(0,-2)$

Solve each system using the graphing method:

① $2x-5y=10$ $-5y=-2x+10$

② $y=\frac{2}{5}x-2$ $y=\frac{2}{5}x-2$

$m=\frac{2}{5}$ $m=\frac{2}{5}$

$I_y:(0,-2)$ $I_y:(0,-2)$

dependent

infinite solutions

Solve each system using the graphing method:

① $3x-4y=12$ $-4y=-3x+12$

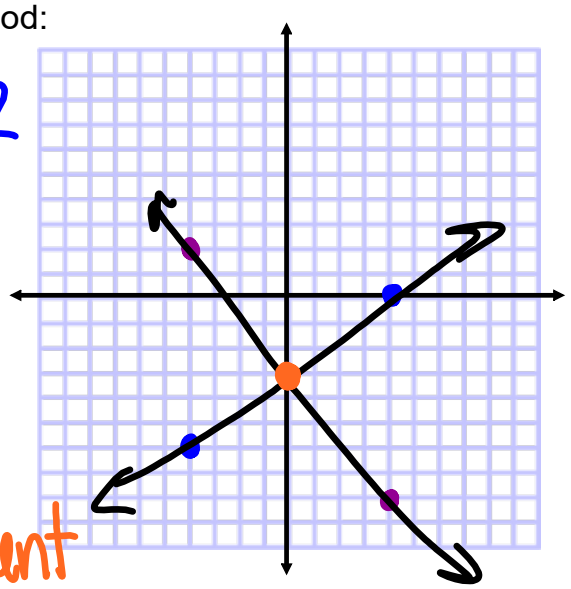
② $5x+4y=-12$ $y=\frac{3}{4}x-3$

$4y=-5x-12$ $m=\frac{3}{4}$

$y=-\frac{5}{4}x-3$ $I_y:(0,-3)$

$m=-\frac{5}{4}$

$I_y:(0,-3)$



independent

$(0,-3)$

Substitution Method:

- Still only three types of solutions
- Method for getting the solution is different
- Graphing method would be difficult to use and get an exact solution if the ordered pair is not based on integers

Substitution Method:

- Choose one of the equations and solve it for either variable
- Use the "value" of the variable to substitute into the other equation
- Solve for the variable

$3x - 3y = 2$

$y - x = 2$

$+x \quad +x$

$y = x + 2$

$3x - 3(x+2) = 2$

$3x - 3x - 6 = 2$

$-6 \neq 2$

inconsistent

no solution

Types of Systems using the Substitution Method:

- Independent - either variable can be solved for and a real value is the result
  x = 3 or y = -5 (3,-5)
- Inconsistent - a false statement results with no variables present
  -3 = 6 or 0 = 2 no solution
- Dependent - a true statement results with no variables present
  7 = 7 or -1 = -1

infinite solutions

Solve each system using the substitution method:

$3x + y = 5$

$2x + 3y = 8$

$y = -3x + 5$

$2x + 3(-3x + 5) = 8$

$2x - 9x + 15 = 8$

$-7x + 15 = 8$

$-7x = -7$

$x = 1$

$y = -3(1) + 5$

$y = -3 + 5$

$y = 2$

independent

(1, 2)

Solve each system using the substitution method:

$4x + y = 9$

$3x - 4y = 2$

$y = -4x + 9$

$3x - 4(-4x + 9) = 2$

$3x + 16x - 36 = 2$

$19x = 38$

$x = 2$

$y = -4(2) + 9$

$y = -8 + 9$

$y = 1$

independent

(2, 1)

Solve each system using the substitution method:

$2x - 5y = 10$

$y = \frac{2}{5}x - 2$

$2x - 5\left(\frac{2}{5}x - 2\right) = 10$

$2x - 2x + 10 = 10$

$10 = 10$ ✓

dependent

infinite solutions

Solve each system using the substitution method:

$3x - 4y = 12$

$5x + 4y = -12$

$-4y = -3x + 12$

$y = \frac{3}{4}x - 3$

$y = \frac{3}{4}(0) - 3$

$y = -3$

$5x + 4\left(\frac{3}{4}x - 3\right) = -12$

$5x + 3x - 12 = -12$

$8x - 12 = -12$

$8x = 0$

$x = 0$

independent

(0, -3)

Assignment:

p.470 #28-56 (by 4)