Math 1 – Spring 2020
Review #5

Solving Systems of Equations – You are looking for the point (x, y) they have in common.

Parallel lines with the same slope and different y-intercept have no point in common. No solution is the answer.

Parallel lines with the same slope and same y-intercept have all points in common. All real numbers is the answer.

There are 3 ways to solve equations.

1. Graph them and look for the intersection. Works well if the two equations are in slope intercept form and if the answer has whole numbers.

2. Substitution method - Works well when one of the equations is already solved for x or y. Just substitute the expression into the other equation and solve. Then do substitution with the first answer back into an equation to find the second variable.

$y = 2x + 5$ $\quad 3x + y = -5$

$3x + (2x+5) = -5$
$5x + 5 = -5$
$5x = -10$
$x = -2$

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

$\boxed{(-2, 1)}$

3. Elimination – Once everything is lined up, the goal is to have one of the variables cancel out. You may need to multiply one or both equations in order for this to happen.

$2x + 3y = 10$
$+ \quad -2x - y = -2$
$2y = 8$
$y = 4$

$2x + 3y = 10$
$2x + 3(4) = 10$
$2x + 12 = 10$
$2x = -2$
$x = -1$

$\boxed{(-1, 4)}$

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Review #5 Solving Systems of Equations

Date_____ Period____

Solve each system by substitution.

1) $2x - 3y = 2$
$y = -5x + 22$

2) $y = -2x + 3$
$6x - 5y = -15$

3) $-5x + 2y = 18$
$y = 3x + 11$

4) $y = x - 8$
$3x - 2y = 18$

Solve each system by elimination.

5) $2x - y = 4$
$-2x + 3y = 12$

6) $-3x - 5y = -27$
$3x + 2y = 9$

Solve using either substitution or elimination.

7) $-8x + y = 9$
$-x + 8y = 9$

8) $-7x + y = -16$
$5x - 2y = 5$