

PRECALCULUS PROBLEM SESSION #14

Systems of Linear Equations

- 0 (two parallel lines on a coordinate plane- never intersect, therefore no solutions) , 1 (Two lines on a coordinate plane that intersect once- that one solution), or an infinite amount of solutions (two graphs on the coordinate plane that are the same exact line- every point matches- hence an infinite number of solutions).
- $(-1, -5)$ is a solution to the system; $(0, -2)$ is not a solution to the system.
- Solve by using the substitution method
 - $x = -2, y = 3$
 - $x = -17, y = -8$
- Solve by using the addition method
 - $x = -6, y = -2$
 - $x = -2, y = -4$
- Solve by using any method
 - No solutions exist
 - $y = 2x - 1$
 - $x = \frac{41}{7}, y = \frac{36}{7}$

Systems of Nonlinear Equations in Two Variables

- Solve the system
 - $x = -4, y = 1$ and $x = 1, y = -4$
 - $x = 1, y = 1$
 - $x = 0, y = 0$ and $x = -\sqrt{3}, y = 3$
- Solve by using the substitution method
 - $x = 0, y = 1$ and $x = 1, y = 2$
 - $x = 1, y = -2$ and $x = 2, y = 1$
 - $x = -2, y = -2$ and $x = 2, y = 2$
- Solve by using the addition method
 - $x = -1, y = \pm 2$ and $x = 1, y = \pm 2$
- Solve by using any method
 - $x = \frac{19}{29}, y = \frac{11}{29}$ and $x = 1, y = 1$
 - $x = -5, y = 0$ and $x = 4, y = 3$
 - $x = -3, y = \pm 2$ and $x = 3, y = \pm 2$