

Systems of Linear Equations and Inequalities - Practice Worksheet

Name: _____ Date: _____

Instructions: Solve each system using any method (substitution, elimination, or graphing). Write your answer as an ordered pair (x, y) , or describe the solution region for inequalities.

1. Solve: $y = 2x + 1$ and $y = x + 4$

2. Solve: $y = x - 2$ and $y = -x + 6$

3. Solve by substitution: $y = 3x$ and $2x + y = 10$

4. Solve by substitution: $x = y + 1$ and $2x + 3y = 17$

5. Solve by elimination: $2x + y = 8$ and $x - y = 1$

6. Solve by elimination: $3x + 2y = 12$ and $x + 2y = 8$

7. Solve by elimination: $4x - 3y = 1$ and $2x + 3y = 11$

8. Solve: $2x + 5y = 20$ and $3x - y = 6$

9. Determine the number of solutions: $y = 2x + 3$ and $4x - 2y = -6$

10. Determine the number of solutions: $y = x + 2$ and $y = x - 5$

11. Graph and shade the solution region: $y \geq x + 1$ and $y \leq -x + 5$

12. Is the point $(1, 4)$ a solution to the system: $y > 2x + 1$ and $y < -x + 6$?

Answer Key

1. $(3, 7)$

2. $(4, 2)$

3. $(2, 6)$

4. $(4, 3)$

5. $(3, 2)$

6. $(2, 3)$

7. $(2, 7/3)$

8. $(50/17, 48/17)$

9. Infinitely many solutions (same line)

10. No solution (parallel lines)

11. Region above $y = x+1$ and below $y = -x+5$; intersection point (2, 3); shaded triangle region

12. Yes - (1,4): $4 > 3$ (true) and $4 < 5$ (true)