

SPARK Hybrid Education Center

Mathematics | Week 1: What is a System? | Upper Level

Name: _____ Date: _____

Directions: Solve each problem. Show your work in the space provided. Circle your final answer.

1. Is $(2, 3)$ a solution to: $x + y = 5$ and $2x - y = 1$?
2. Is $(-1, 4)$ a solution to: $y = 2x + 6$ and $y = -x + 3$?
3. Graph and find solution: $y = x + 1$ and $y = -x + 5$.
4. How many solutions does a system of parallel lines have?
5. Graph: $y = 2x - 3$ and $y = 2x + 1$. What do you notice?
6. Identify the solution from a graph where lines cross at $(3, -1)$.
7. Write a system with solution $(0, 5)$: one equation must be $y = 5$.
8. A system has infinite solutions. What does this mean geometrically?

--- Answer Key (Cut before distributing) ---

1. Yes ($2+3=5$ OK, $4-3=1$ OK)
2. No (check fails for 2nd eq.)
3. $(2, 3)$
4. No solution
5. Parallel; no solution
6. $(3, -1)$
7. Answers vary; e.g. $y=x+5$ and $y=5$
8. Lines are the same (coincident)

