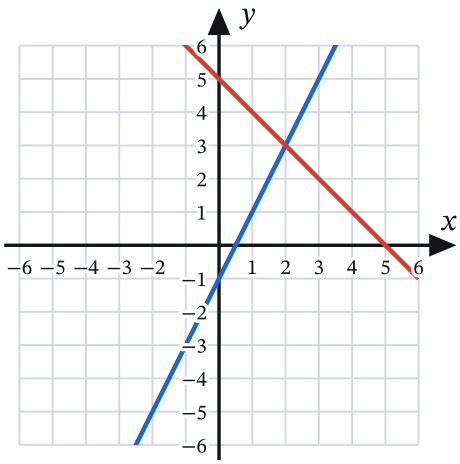
Name _____ Date _____

Solving Systems Graphically

Remember

The solution of a system of two linear equations is an ordered pair (x, y) that satisfies **both** equations. On a graph it is the **intersection** of the lines. Parallel lines: the system has no solution. The same line: the system has infinitely many solutions.

1 ON YOUR OWN The picture shows the lines $y = 2x - 1$ and $y = -x + 5$. Read off the intersection and check it in both equations.



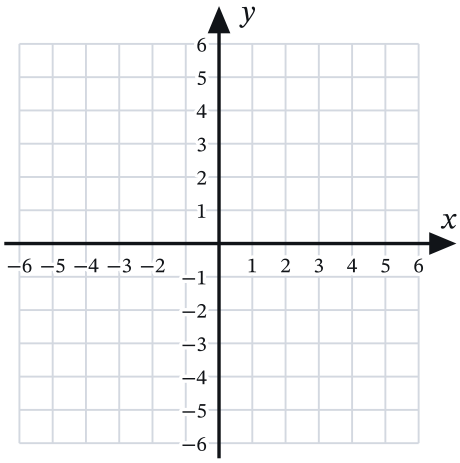
$(x, y) =$ ☐

Check:

_____

_____

2 IN PAIRS Draw the lines and read off the solution of the system $x + y = 4, y = x - 2$. Hint: write the first equation as $y = \ldots$



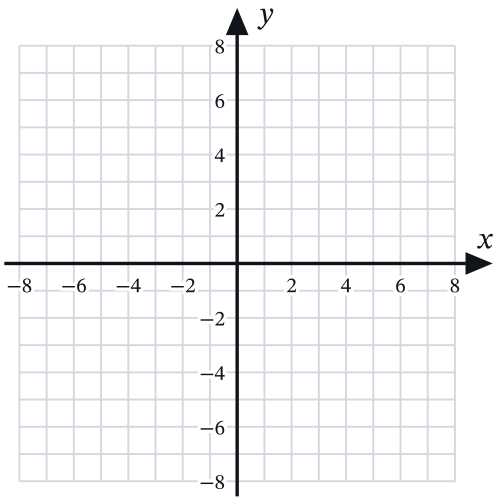
$(x, y) =$ ☐

Names (group) _____ Date _____

3 IN A GROUP How many solutions does the system have? Explain using the slopes of the lines.

System	Number of solutions	Why?
$y = 2x + 1$ $y = 2x - 3$	0 / 1 / ∞	
$2x + y = 3$ $4x + 2y = 6$	0 / 1 / ∞	
$y = x + 1$ $y = -x + 1$	0 / 1 / ∞	

4 IN A GROUP **Taxis.** Taxi A charges 3 € plus 1 € per kilometre, and taxi B 5 € plus 0.5 € per kilometre. Draw the graphs of the price and find at which distance they cost the same.



A: $y =$ ____

B: $y =$ ____

the same for ____ km, ____ €

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Type both equations and turn on **Intersections of curves**.

★ ON YOUR OWN **Exit card.** Is $(1, 2)$ a solution of the system $x + y = 3, 2x - y = 0$?

yes / **no**