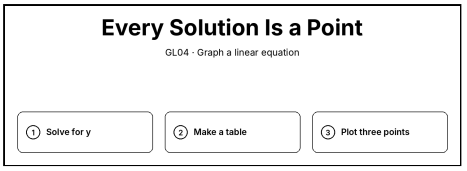
Every Solution Is a Point: teacher script

GL04-V1 · GL04 Graph a linear equation · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 61 seconds as a video.

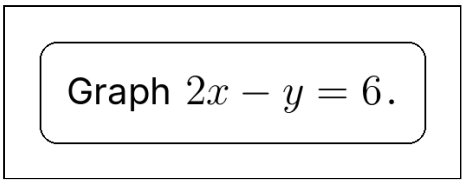
01



Say. Graphing an equation. Solve for y. Make a table. Then plot three points and draw the line.

Draw. Write the title “Every Solution Is a Point” and the steps: 1. Solve for y; 2. Make a table; 3. Plot three points.

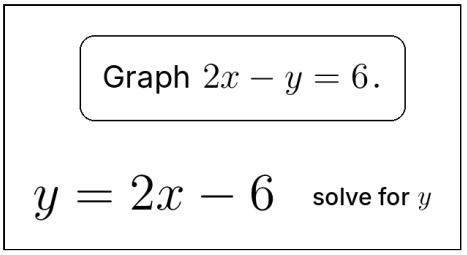
02



Say. Graph 2 x minus y equals 6.

Draw. Clear the board. Write “Graph 2x − y = 6.” in a box at the top.

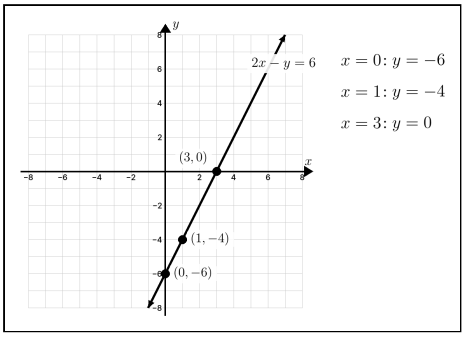
03



Say. First solve for y: y equals 2 x minus 6.

Draw. Write y = 2x − 6 on the next line. Beside it, write “solve for y”.

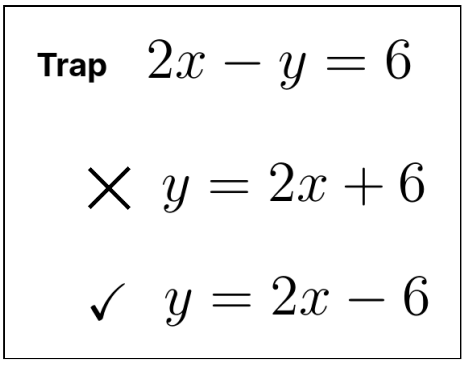
04



Say. A table: when x is 0, y is negative 6. When x is 1, y is negative 4. When x is 3, y is 0. The three points lie on a straight line: draw it, with arrows, because it goes on for ever.

Draw. Clear the board and draw a grid with axes from -8 to 8. Plot (0, -6) and label it “(0, −6)”. Plot (1, -4) and label it “(1, −4)”. Plot (3, 0) and label it “(3, 0)”. Draw the line 2x − y = 6, labelled “2x − y = 6”. Beside the grid, write “x = 0: y = −6”. Beside the grid, write “x = 1: y = −4”. Beside the grid, write “x = 3: y = 0”.

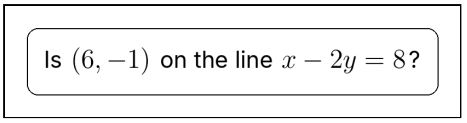
05



Say. Watch for the trap: a sign slip when you solve for y. Check a point in the original equation: 0, negative 6 gives 0 plus 6, which is 6.

Draw. Clear the board. Write “Trap” and 2x − y = 6. Below, write y = 2x + 6 and cross it out ×. Then write y = 2x − 6 with a tick ✓.

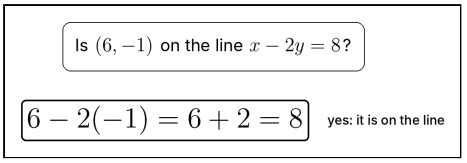
06



Say. Is the point 6, negative 1 on the line x minus 2 y equals 8?

Draw. Clear the board. Write “Is (6, −1) on the line x − 2y = 8?” in a box at the top.

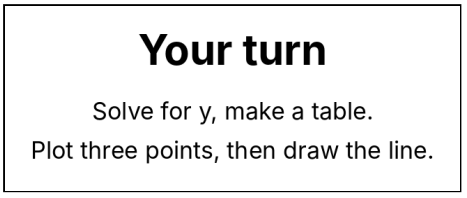
07



Say. Put it in: x is 6 and y is negative 1. 6 minus 2 times negative 1 is 8. Yes, it is on the line.

Draw. Write 6 − 2(−1) = 6 + 2 = 8 and box it on the next line. Beside it, write “yes: it is on the line”.

08



Say. Now it is your turn. Solve for y, make a table, and plot three points.

Draw. Point to today’s activity: Solve for y, make a table. Plot three points, then draw the line.