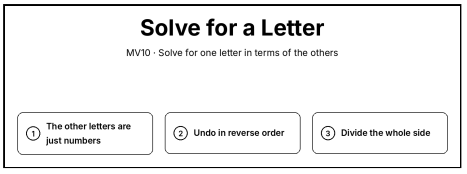
Solve for a Letter: teacher script

MV10-V1 · MV10 Solve for one letter in terms of the others · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 55 seconds as a video.

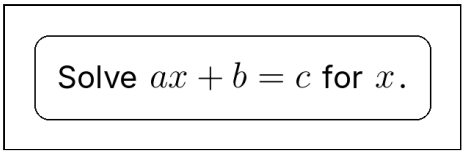
01



Say. Solve for a letter. Treat the other letters as if they were just numbers. Undo in reverse order, and divide the whole side.

Draw. Write the title “Solve for a Letter” and the steps: 1. The other letters are just numbers; 2. Undo in reverse order; 3. Divide the whole side.

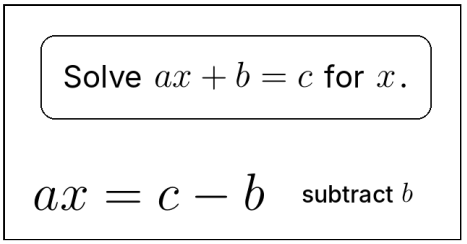
02



Say. Solve ax + b = c for x.

Draw. Clear the board. Write “Solve ax + b = c for x.” in a box at the top.

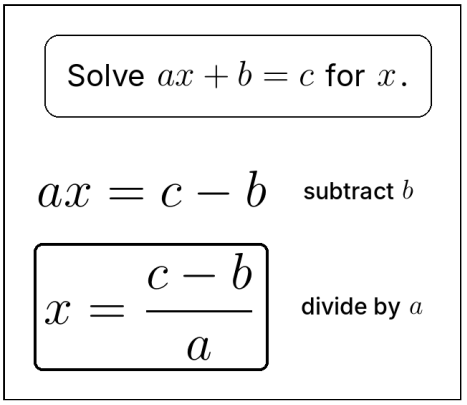
03



Say. Subtract b from both sides.

Draw. Write ax = c − b on the next line. Beside it, write “subtract b”.

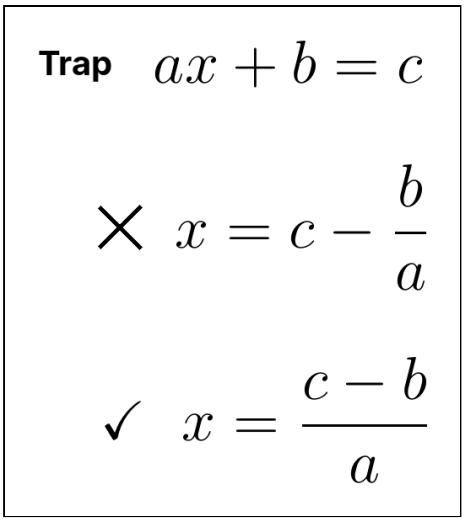
04



Say. Divide both sides by a: x equals c − b, all over a.

Draw. Write x = (c − b)/a and box it on the next line. Beside it, write “divide by a”.

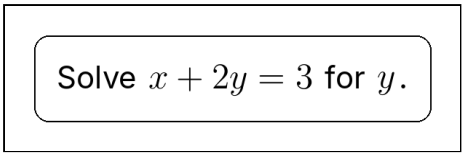
05



Say. Watch for the trap: dividing only one term. Divide the whole side by a.

Draw. Clear the board. Write “Trap” and ax + b = c. Below, write x = c − b/a and cross it out ×. Then write x = (c − b)/a with a tick ✓.

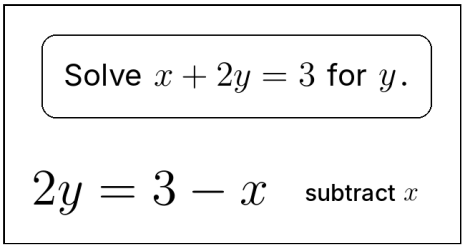
06



Say. Now solve x + 2y = 3 for y.

Draw. Clear the board. Write “Solve x + 2y = 3 for y.” in a box at the top.

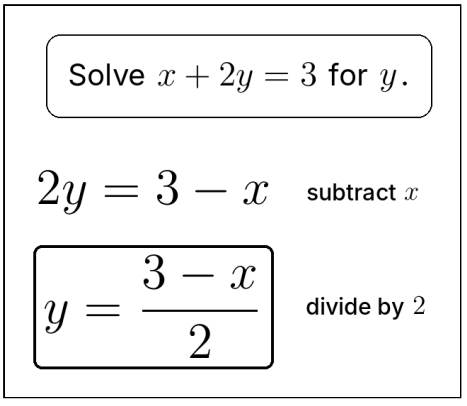
07



Say. Subtract x from both sides.

Draw. Write 2y = 3 − x on the next line. Beside it, write “subtract x”.

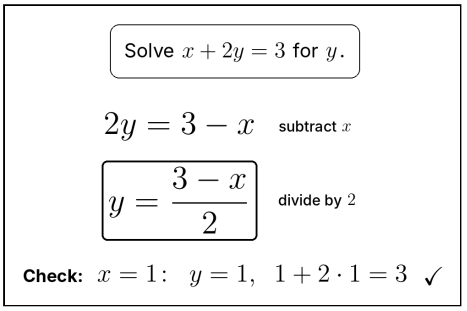
08



Say. Divide by two: y equals 3 − x, over two.

Draw. Write y = (3 − x)/2 and box it on the next line. Beside it, write “divide by 2”.

09



Say. Check with x = 1: then y is one, and one plus two is three.

Draw. Below, write “Check: x = 1: y = 1, 1 + 2 · 1 = 3” and tick it ✓.

10

Trap $x + 2y = 3$

$\times \quad 2y = 3 + x$

$\checkmark \quad 2y = 3 - x$

Say. Watch for the trap: moving a term without changing its sign. Taking x away from both sides changes its sign.

Draw. Clear the board. Write “Trap” and x + 2y = 3. Below, write 2y = 3 + x and cross it out ×. Then write 2y = 3 − x with a tick ✓.

11

Your turn

Undo in reverse order, and divide the whole side

Say. Now it is your turn. Undo in reverse order, and divide the whole side.

Draw. Point to today’s activity: Undo in reverse order, and divide the whole side