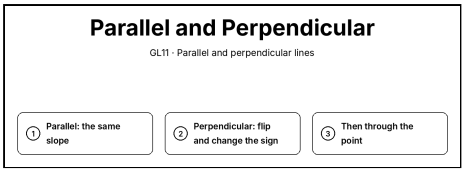
Parallel and Perpendicular: teacher script

GL11-V1 · GL11 Parallel and perpendicular lines · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 61 seconds as a video.

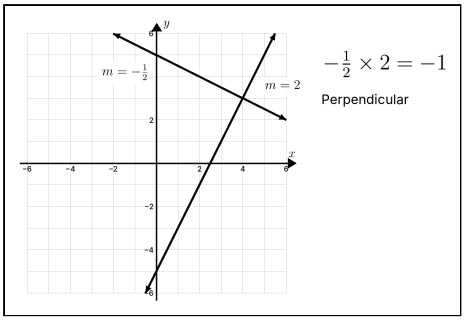
01



Say. Parallel and perpendicular lines. Parallel lines have the same slope. For a perpendicular slope, flip it and change the sign. Then write the line through the point.

Draw. Write the title “Parallel and Perpendicular” and the steps: 1. Parallel: the same slope; 2. Perpendicular: flip and change the sign; 3. Then through the point.

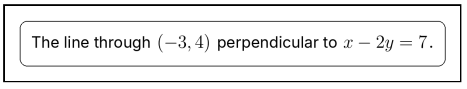
02



Say. These lines have slopes negative a half and slope 2. The slopes multiply to negative 1, and the lines meet at right angles: they are perpendicular.

Draw. Clear the board and draw a grid with axes from -6 to 6. Draw the line x + 2y = 10, labelled “m = −1/2”. Draw the line 2x − y = 5, labelled “m = 2”. Beside the grid, write “-\tfrac12 \times 2 = -1”. Beside the grid, write “Perpendicular”.

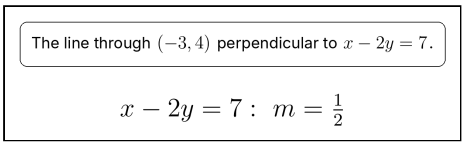
03



Say. Find the line through negative 3, 4 perpendicular to x minus 2 y equals 7.

Draw. Clear the board. Write “The line through (−3, 4) perpendicular to x − 2y = 7.” in a box at the top.

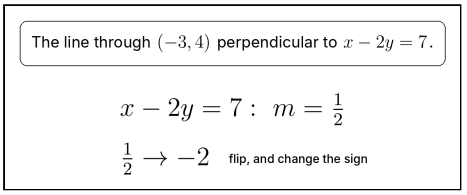
04



Say. The given line has slope one half.

Draw. Write x − 2y = 7:\ m = 1/2 on the next line.

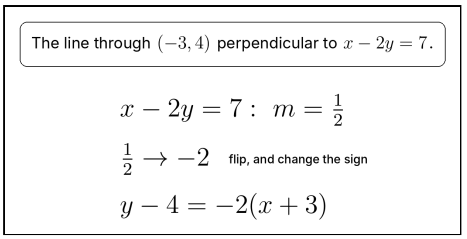
05



Say. Flip it and change the sign: the new slope is negative 2.

Draw. Write 1/2 \to −2 on the next line. Beside it, write “flip, and change the sign”.

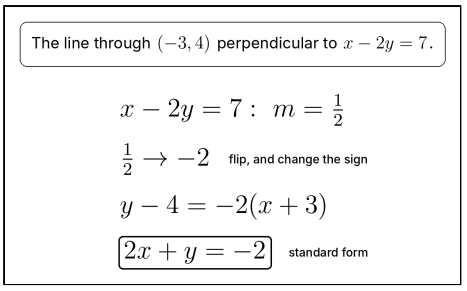
06



Say. Through the point: y minus 4 equals negative 2 times x plus 3.

Draw. Write y − 4 = −2(x + 3) on the next line.

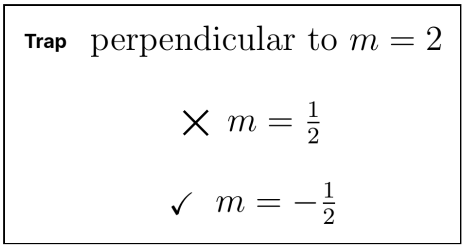
07



Say. In standard form: 2 x plus y equals negative 2.

Draw. Write 2x + y = −2 and box it on the next line. Beside it, write “standard form”.

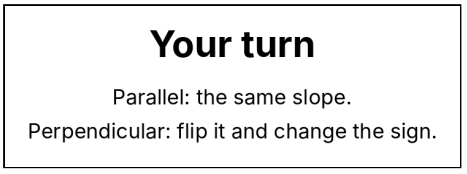
08



Say. Watch for the trap: forgetting the sign. Perpendicular to slope 2 is negative a half: flip and change the sign.

Draw. Clear the board. Write “Trap” and perpendicular to m = 2. Below, write m = 1/2 and cross it out ×. Then write m = −1/2 with a tick ✓.

09



Say. Now it is your turn. The same slope for parallel, and flip and change the sign for perpendicular.

Draw. Point to today’s activity: Parallel: the same slope. Perpendicular: flip it and change the sign.