

The page features a decorative border of cyan zigzag lines. In the center, there is a white rectangular area with a thick, black, hand-drawn style border. Inside this border, the title is written in bold black text.

Parallel, Perpendicular, or Neither?

Identifying Systems of Equations Activity

The Math Lab

Parallel, Perpendicular, or Neither Activity

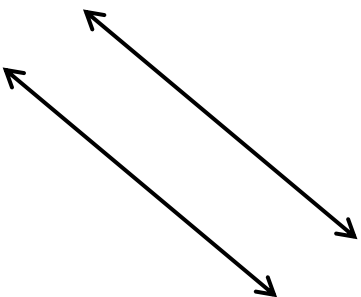
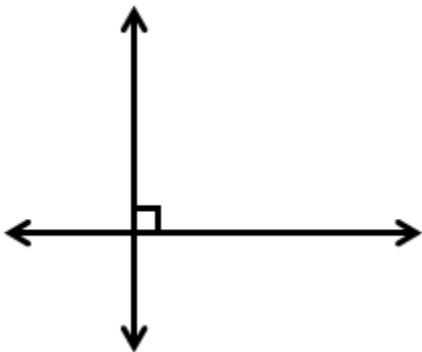
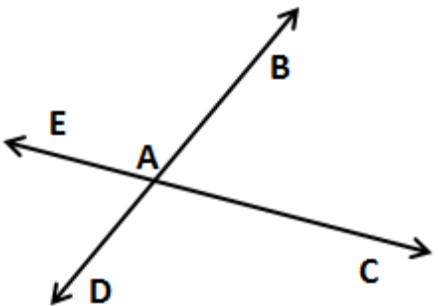
Supplies: Notecards (3 per student), markers, whiteboards or notebook paper, tape or glue

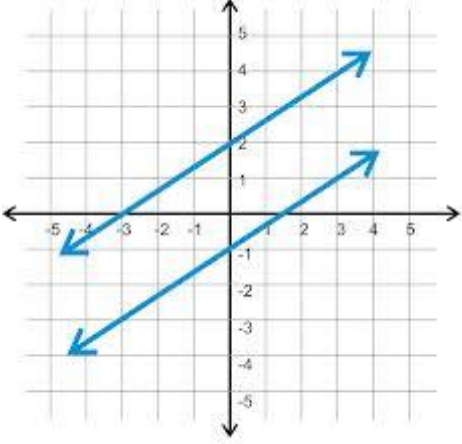
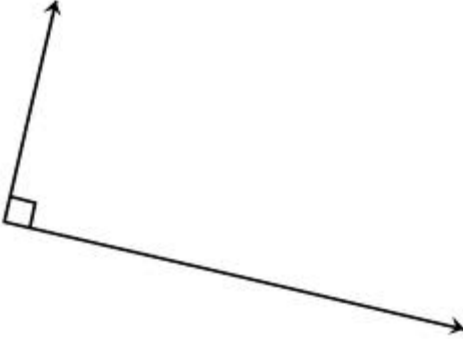
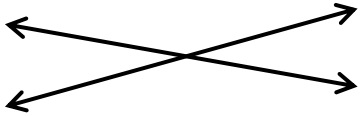
Directions: Have students each create their own PARALLEL, PERPENDICULAR, and NEITHER notecards. You may ask the students to write the word or include information about what the words means on the card. Do not include a picture yet. After students have created their cards, the teacher will place one of the systems of equations cards on the Elmo or in a PPT/ Smartboard slide. Students must figure out if the card represents parallel, perpendicular, or neither type of lines. Students can complete work for each question on whiteboards, in their notes, or on a worksheet. When they have an answer, students will hold up their notecard with the correct classification. Repeat the process with the other cards or until students have mastered this skill. When finished with the activity, have students paste/tape the notecards into their notes with the information below as notes.

Student Notes:

- Parallel Lines: the slopes are the same, different y-intercepts, lines do not intersect, no solutions, ||
- Perpendicular Lines: the slopes are opposite reciprocals, lines intersect at 90 degrees, one solution, \perp

Teacher Cards (cut out each card):

Parallel	Perpendicular	Neither
$y = 2x + 5$ $-2x + y = 12$	$y = 2x + 4$ $y = -\frac{1}{2}x - 9$	$y = 3x + 11$ $y = \frac{1}{3}x - 3$
		

Parallel	Perpendicular	Neither
$3x + 2y = 6$ $6x + 4y = 16$	$y = \frac{1}{2}x + 7$ $2x + y = -5$	$4x + 8y = 16$ $y = 5x + 1$
		
$y = -x + 5$ $y = -x + 4$	$y = -x + 7$ $y = x + 4$	$y = 3x + 5$ $2y = 6x + 10$
$-x + 4y = 9$ $2x - 8y = -1$	$y = 9$ $x = 2$	$y = \frac{2}{3}x + 1$ $y = -2$