

Good morning: warm up in notebooks

Are the lines with the equations below parallel, perpendicular, or neither? Show the calculations that justify your answer.

$$6x + 8y = 24$$

$$4x - 3y = 9$$

→ Solve for y

$$\begin{array}{r} 6x + 8y = 24 \\ -6x \\ \hline 8y = -6x + 24 \end{array}$$

$$\frac{8y}{8} = \frac{-6x + 24}{8}$$

$$y = -\frac{3}{4}x + 3$$

$$\begin{array}{r} 4x - 3y = 9 \\ -4x \\ \hline -3y = -4x + 9 \\ \frac{-3y}{-3} = \frac{-4x + 9}{-3} \\ y = \frac{4}{3}x - 3 \end{array}$$

Perpendicular
 $-\frac{3}{4} \cdot \frac{4}{3} = -\frac{12}{12} = -1$

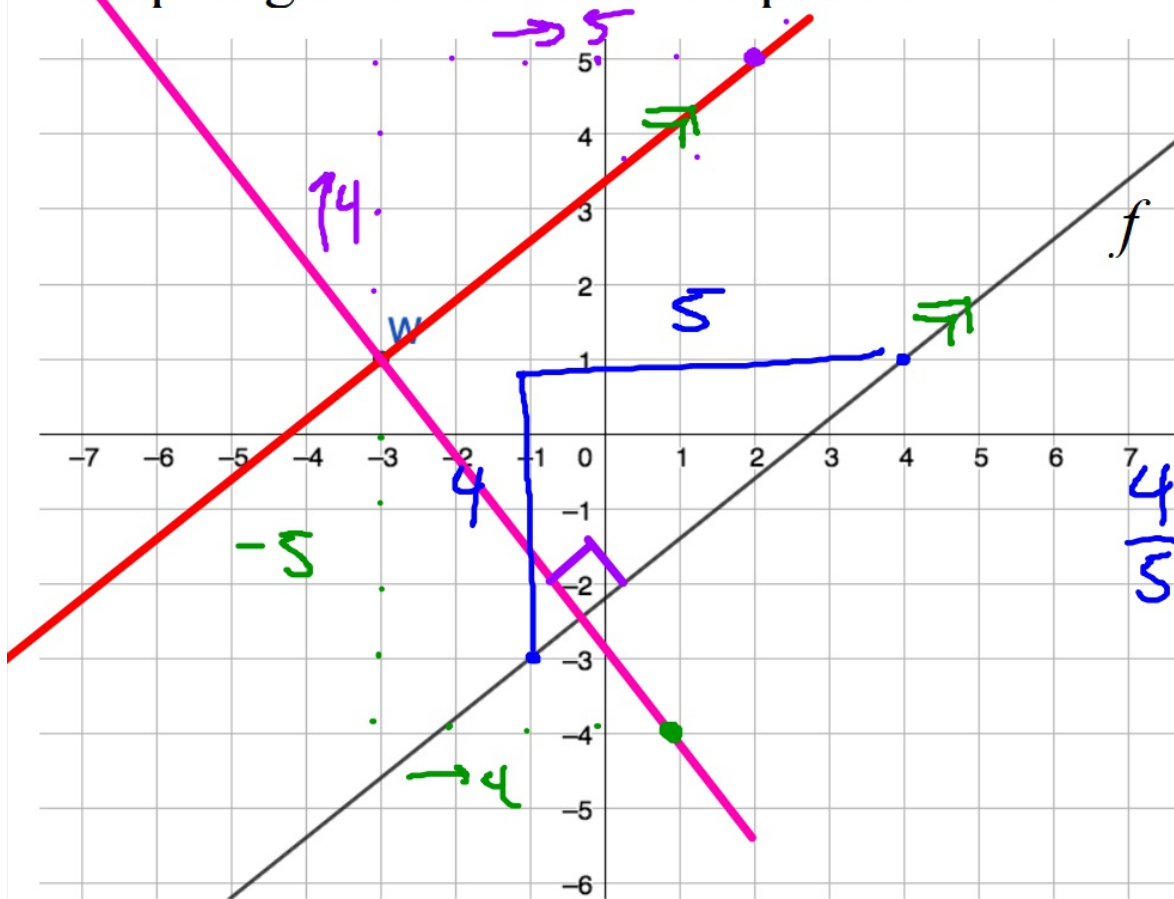
Hint:

When a linear equation is in $y = mx + b$ form, m represents slope

Reminders:

- next assessment: Monday
- retakes in DS and tutoring (4-5p today)

Graphing Parallels and Perpendiculars



Graph a line

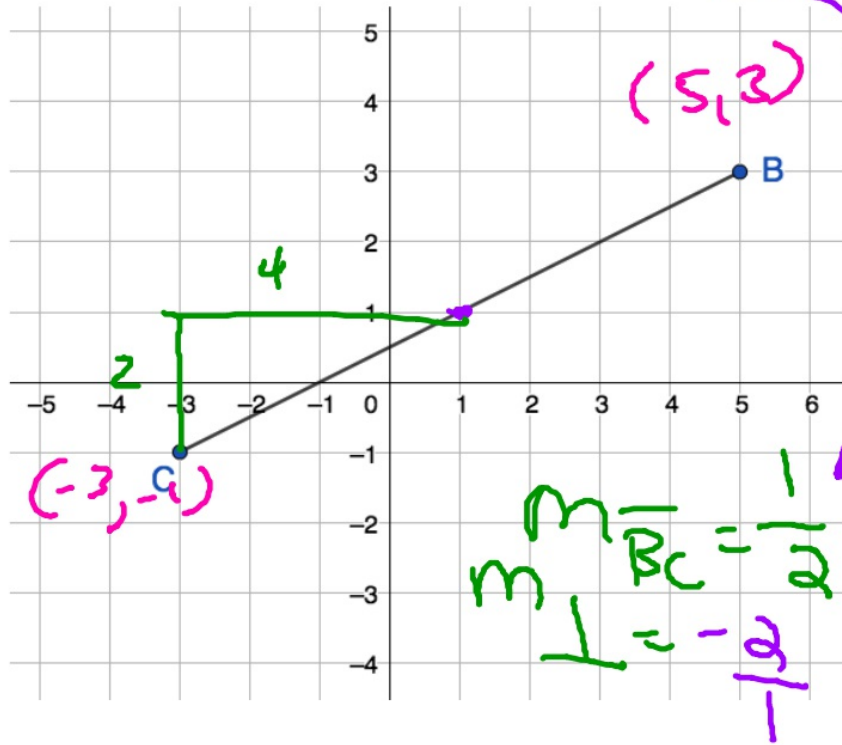
(a) parallel to line f passing through W

(b) perpendicular to line f , passing through W

$$\frac{4}{5} \perp -\frac{5}{4}$$

Expressing Linear Relationships Algebraically

Write the equation of the perpendicular bisector of segment BC



① Find midpoint

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\left(\frac{-3 + 5}{2}, \frac{-1 + 3}{2} \right)$$

$$\left(\frac{2}{2}, \frac{2}{2} \right) \rightarrow (1, 1)$$

② Find \perp slope

Point Slope Form of a Line

(x_1, y_1)

$$y - y_1 = m(x - x_1)$$

$(1, 1)$
 x_1, y_1

$$m = -\frac{2}{1} = -2$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$y - 1 = -2(x - 1)$$

What will be on Monday's assessment:

- determining if lines are parallel, perp. or neither (warmup)
 - graphing parallel and perp lines
 - writing the equation of a line
- OLD { constructions, including angle bisector (review + Thursday's lesson)
- distance and midpoint on the coordinate plane (review)



HW: p97-98: #2-14 (even), 15

Heading back to the computer lab:

- Export Geogebra, Import Tinkercad, Export STL from Tinkercad
- Work on slope calculations
 - show that 2 non-horizontal/vertical segments are parallel
 - show that 2 non-horizontal/vertical segments are perpendicular
 - find the slope of a transversal line
- Submit Geogebra Graph with grid, calculations, and STL via Classroom
- Work on HW

