Name: _Solutions_

Section 4.9 Summary of Graphing Lines

Make sure you know all the formulas

Slope

Slope Formula	Slopes of Parallel Lines	Slopes of Perpendicular Lines
$m = \dfrac{y_2 - y_1}{x_2 - x_1} = \dfrac{rise}{run}$	Same	opposite reciprocals

Three forms of a line

Slope-Intercept	Point-Slope	Standard Form
$y = mx + b$	$y = m(x - x_1) + y_1$	$Ax + By = C$

Three methods of graphing a line

make a table $\quad x \mid y$	$y = mx + b$ ↑ y-intercept and slope $\left(\dfrac{rise}{run}\right)$	$Ax + By = C$ plot the intercepts

How to write the equation of a line or linear model with the given information

Slope and y-intercept given	Slope and a point given	Two points given
$\overset{m}{} \qquad \overset{b}{}$ $y = mx + b$ plug in m and b	$\overset{m}{} \quad (x_1, y_1)$ use point-slope $y = m(x - x_1) + y_1$	$(x_1, y_1) \quad (x_2, y_2)$ Find slope: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$ Then use point-slope $y = m(x - x_1) + y_1$

Two special types of lines, with equations and slopes

Horizontal $m = 0$ $y = 4$ (any number)	Vertical $m = $ undefined $x = 2$ (any number)

Graphing linear inequalities in two-variables

What are the steps to graph an inequality?		Inequality Symbol	Type of Line	Direction of Shading
Solve for y first		$y > mx + b$	dotted	above
		$y \geq mx + b$	solid	above
When do you reverse the inequality symbol?		$y < mx + b$	dotted	below
If you multiply or divide by a negative		$y \leq mx + b$	solid	below

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