

Chapter 6 Study Guide

Skill	Description	Example
Find the slope of a line.	<p>Slope = $\frac{\text{rise}}{\text{run}}$</p> <p>The slope of a line through $A(x_1, y_1)$ and $B(x_2, y_2)$ is: $\frac{y_2 - y_1}{x_2 - x_1}$</p>	<p>For $A(2, -4)$ and $B(-1, 3)$:</p> <p>Rise: $3 - (-4) = 7$</p> <p>Run: $-1 - 2 = -3$</p> <p>Slope: $\frac{7}{-3}$, or $-\frac{7}{3}$</p>
Identify parallel lines and perpendicular lines.	<p>Parallel lines have equal slopes.</p> <p>Perpendicular lines have slopes that are negative reciprocals.</p>	<p>Line AB has slope $-\frac{7}{3}$.</p> <p>Line CD has slope $-\frac{7}{3}$.</p> <p>Line EF has slope $\frac{3}{7}$.</p> <p>Lines AB and CD are parallel.</p> <p>Lines AB and EF are perpendicular.</p> <p>Lines CD and EF are perpendicular.</p>
Write the equation of a line in slope-intercept form.	A line with slope, m , and y -intercept, b , has equation: $y = mx + b$	For a line with slope 3 and y -intercept -2 , an equation is: $y = 3x - 2$
Write the equation of a line in slope-point form.	A line with slope, m , that passes through $P(x_1, y_1)$, has equation: $y - y_1 = m(x - x_1)$	A line with slope -4 that passes through $P(-1, 3)$ has equation: $y - 3 = -4(x - (-1))$, or $y - 3 = -4(x + 1)$
Find the intercepts of a line when its equation is in general form.	The general form of an equation is: $Ax + By + C = 0$, where A, B , and C are integers, and A is positive	<p>A line has equation: $3x - 2y + 6 = 0$</p> <p>For the y-intercept, substitute $x = 0$: $3(0) - 2y + 6 = 0$ $-2y = -6$ $y = 3$</p> <p>For the x-intercept, substitute $y = 0$: $3x - 2(0) + 6 = 0$ $3x + 6 = 0$ $3x = -6$ $x = -2$</p>