4-3 Notes: Writing Equations in Point-Slope Form

Point-Slope Form

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To write an equation in point-slope form, all you need is the slope m and any point on the line (x_1, y_1). Substitute these values into the point slope formula and reduce any signs.

Example 1: Write an equation in point-slope form for the line that passes through (6, 1) with a slope of $-\frac{5}{2}$.

Example 2: Write an equation in point-slope form for the line containing (2, 5) and (4, –1).

Forms of Linear Equations

Slope-Intercept Form	$y = mx + b$	m = slope; b = y-intercept
Point-Slope Form	$y - y_1 = m(x - x_1)$	m = slope; (x_1, y_1) is a given point
Standard Form	$Ax + By = C$	A and B are not both zero. Usually A is nonnegative and A, B, and C are integers whose greatest common factor is 1.

Example 1: Write $y + 5 = \frac{2}{3}(x - 6)$ in standard form.

Example 2: Write $y - 2 = -\frac{1}{4}(x - 8)$ in slope-intercept form.

4-2 Notes: Writing Equations in Slope-Intercept Form

Example 1: Write an equation of the line that passes through (–4, 2) with a slope of 3.

Write an Equation Given Two Points

Example: Write an equation of the line that passes through (1, 2) and (3, –2).

Example: Write an equation of the line that passes through (1, -2) and (7, -2).

Example: Write an equation of the line that passes through (-3, -2) and (-3, 7).