Preliminaries and Objectives

Preliminaries

• Slope-Intercept Form of a Line
• Point-Slope Form of a Line

Objectives

• Review the method to determine the equation of a line
• We may be given the slope
• If given two points, use the slope formula

\[ m = \frac{y_2 - y_1}{x_2 - x_1} \]

• Parallel lines have the same slope
• If \( m \) is the slope of a line, then \(-\frac{1}{m}\) is the slope of a line perpendicular to the first line
Points on Lines

• Given a point \((x_0, y_0)\), use the point-slope form

\[(y - y_0) = m(x - x_0)\]

• If the \(y\)-intercept \(= b\), use the slope-intercept form

\[y = mx + b\]

• If the \(y\)-intercept \(= b\), the line goes through the point \((0, b)\)

• If the \(x\)-intercept \(= a\), the line goes through the point \((a, 0)\)
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