Straight line

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STUDY FOR FE

Key Equations

Slope-Intercept Equation

$$y = mx + b$$

Point-Slope Equation

$$m = \frac{(y - y_1)}{(x - x_1)}$$

Two Point Equation

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

Angle between two straight lines

$$\alpha = \tan^{-1} \frac{m_2 - m_1}{1 + m_1 m_2}$$

For two lines to be perpendicular: $m_1 = -\frac{1}{m_2}$

For two lines to be parallel: $m_1 = m_1$

Slope-intercept equation: This is the most common way to represent a linear equation in two-dimensional space. It takes the form $y = mx\ b$, where m represents the slope of the line, and b represents the y-intercept. The slope describes the line's steepness or incline, and the y-intercept represents the point where the line crosses the y-axis.

Point-slope equation: This form of the equation is used to find the equation of a straight line when you have a point on the line and the slope of the line.

Two-point equation: This equation form is used to find the equation of a straight line when you have two points on the line.

Angle between two straight lines equation: This equation is used to find the angle between two straight lines. Set up the equation such that $m_2 > m_1$