Slope Criteria for Lines

Today's Standard

HSG.GPE.B5 - Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

Real-World Applications for this Standard

Designing parallel roads or railways; Architecture: Ensuring walls are perpendicular; Engineering: Creating perpendicular supports in structures; Urban planning: Aligning streets and avenues; Computer graphics: Drawing parallel and perpendicular lines

Today I Learned

Today, we learned about how to prove that lines are parallel or perpendicular by looking at their slopes. If two lines have the same slope, they are parallel. If their slopes are negative reciprocals, they are perpendicular.

Common Stumbling Blocks

Some common stumbling blocks include thinking that all lines with the same slope are the same line, and believing that perpendicular lines only have special slopes when they cross at the origin. These ideas are not correct and can be confusing.

Quiz Me

- What does it mean if two lines have the same slope?
- What are perpendicular lines?
- How do you find the slope of a line?
- What is a y-intercept?
- Can two lines have the same slope and not be the same line?

Help Me

When we talk about parallel and perpendicular lines, we are talking about how they look on a graph. Parallel lines never meet because they go in the same direction. Perpendicular lines cross each other at a right angle,

like the corners of a square. We use these ideas in real life, like when building roads or designing buildings.