

Parallel Lines Exploration

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Activity overview

The purpose of this activity is to use the dynamic capabilities of the TI-Nspire to help students make conjectures about the measures of angles when two parallel lines are cut by a transversal.

Concepts

Parallel Lines cut by a transversal, Corresponding Angles, Consecutive Interior & Exterior Angles, Alternate Interior & Exterior Angles, Perpendicular Lines, Supplementary & Congruent Angles

Teacher preparation

The teacher should familiarize himself/herself with the file **Parallel Lines Exploration.tns**.

Classroom management tips

The activity was written with the idea of the teacher using the file to present to the whole class.

TI-Nspire Applications

Graphs & Geometry

Step-by-step directions

Page 1.1

On the next page two lines are cut by a transversal. Have students explore how the angle measures change as the lines are moved.

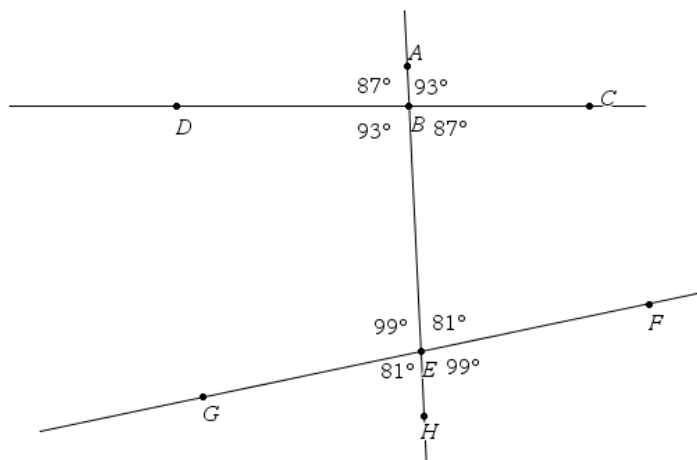
Can they move the two lines in such a way that all of the angle measures are equal? Have students make a conjecture about the relationship of the lines in this case.

Can they move the two lines in such a way that four of the angle measures are equal? Have students make a conjecture about the relationship of the lines in this case.

Page 1.2

When you begin the activity, the two lines are not parallel. Only vertical angles are congruent, and angles that form a linear pair are supplementary.

Students should realize that if you move the lines so that they appear to be parallel, then more angles are congruent and/or supplementary. They should realize that if you move the lines so that both lines are perpendicular to the transversal, then all angles are right.



Page 1.3

On the next page, two parallel lines are cut by a transversal. Have students explore how the angle measures change as the lines are moved.

Page 1.4

Since the lines are constructed to be parallel, each pair of angles measured is either congruent or supplementary. Discuss the relationship between specific pairs of angles, such as alternate interior angles, corresponding angles, consecutive exterior angles, etc.

