



Parallel Lines Cut By A Transversal

Student Activity

Name _____

Class _____

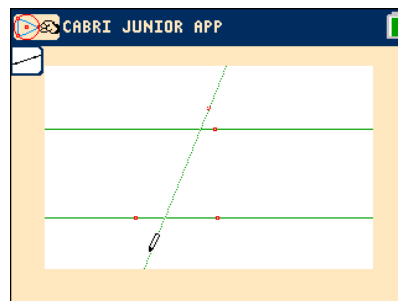
Open the CabriJr application from the Apps menu. Then press **F1** and select **New**.

Tech Tip: If axes are shown, use **F5, Hide/Show > Axes**, to hide them. Also, note that **[ALPHA]** will grab an object. **[CLEAR]** will release it or escape out of a tool.

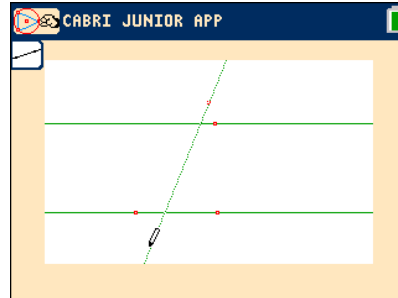
You will construct two parallel lines that are cut by a transversal. To begin, press **F2** and select the **Line** tool. Press **[ENTER]** to place the first point at the bottom left corner. Place the second point at the bottom right corner.

To construct a line parallel to the first, press **F3** and select the **Parallel** tool. Select the line by moving your cursor near the line so that it becomes dashed. Press **[ENTER]** and move to the top half of the screen. Once you are happy with its location, press **[ENTER]**.

Next you will construct a transversal. Press **F2** and select the **Line** tool. Place the first point above the top line and press **[ENTER]**. Place the second point below the bottom line, and press **[ENTER]** to place the point.



Press **F5** and use the down and right arrow to select the **Measure > Angle** tool. Select the 3 points that create an angle formed by the transversal and the parallel lines by moving the cursor and pressing **[ENTER]** for each point. Press **[ENTER]** to place the measurement.



With the angle measuring tool active, measure some of the other angles formed by the two parallel lines and the transversal. After you measure each angle, move each measurement to a convenient location. Be sure to measure all of the corresponding, alternate interior, and alternate exterior angle pairs. When finished, press **[CLEAR]** to exit out of the **Angle** tool.

Move the pointer to one of the points on the transversal. Press **[ALPHA]** to grab and drag this point. Observe the angle measures as the position of the transversal changes.



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Record your observations below:

1. Which angle pairs remain congruent as the position of the transversal changes?
2. Fill in the blank: When a transversal cuts through two parallel lines, the corresponding angles formed by the transversal are:
 - A. never congruent
 - B. sometimes congruent
 - C. always congruent
3. A student claims two lines in a plane are parallel. To support her claim, she draws a transversal line and shows that the interior angles formed by the transversal are congruent. Do you agree with her claim? Explain.