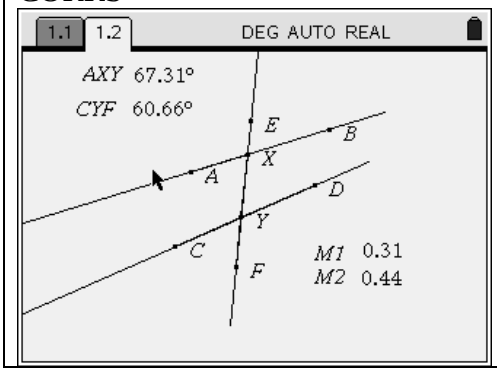
Teacher Notes

G.G.35 Determine if two lines cut by a transversal are parallel, based on the measure of given pairs of angles formed by the transversal and the lines.

Lesson Launcher Objectives:

1) **Identifying corresponding angle pairs when two lines are cut by a transversal.**
2) **Discovering when lines are parallel by investigating the measures of corresponding angle pairs**

Procedure:

The student opens the .tns document CORRS 	As the student explores the figure by moving various points they will be able to conclude the relationship between equal alternate interior angles and parallelism.

Investigating $\angle AXY$ and $\angle CYF$:

1. True or False:

A) $\angle AXY$ and $\angle CYF$ are interior angles. false

B) $\angle AXY$ and $\angle CYF$ are exterior angles. false

C) $\angle AXY$ is an interior angle. true

D) $\angle CYF$ is an exterior angle. true

E) $\angle AXY$ and $\angle CYF$ are adjacent angles. false

F) $\angle AXY$ and $\angle CYF$ are on opposite sides of transversal $\overleftrightarrow{EF}$. false

G) $\angle AXY$ and $\angle CYF$ are on the same side of transversal $\overleftrightarrow{EF}$. true

2. $\angle AXY$ and $\angle CYF$ are C) corresponding angles

A) alternate exterior angles

B) interior angles on the same side of the transversal

C) corresponding angles

D) alternate interior angles

SELECT, GRAB AND MOVE **point A, B, C, D, E, F**

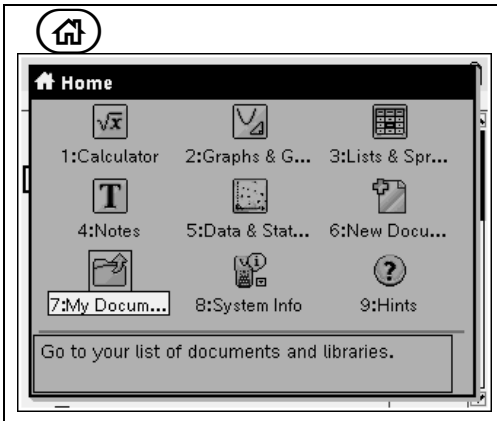
When point A is moved the measures of $\angle AXY$ and $\angle XYD$ change. The measures of the slopes change as well. The same thing can be surmised by moving the other points in the figure.

3. From your observations what seems to be true about $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ when $\angle AXY = \angle CYF$? $\overleftrightarrow{AB} \square \overleftrightarrow{CD}$

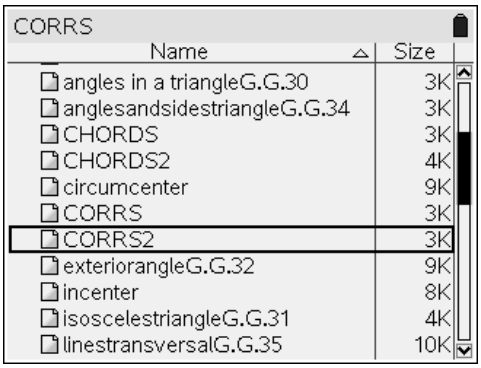
4. From your observations what seems to be true about $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ when M1 = M2 ? $\overleftrightarrow{AB} \square \overleftrightarrow{CD}$

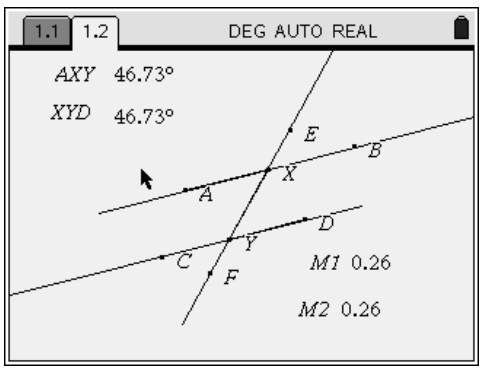
Fill in the blank:

If two lines are cut by a transversal and a pair of corresponding angles are equal then the lines are parallel.



Select My documents 7
Open Folder Geometry NY
Select CORRS2





Answer the following questions.

1. True or False:

H) $\angle AXY$ and $\angle CYF$ are interior angles. false

I) $\angle AXY$ and $\angle CYF$ are exterior angles. false

J) $\angle AXY$ is an interior angle. true

K) $\angle CYF$ is an exterior angle. true

L) $\angle AXY$ and $\angle CYF$ are adjacent angles. false

M) $\angle AXY$ and $\angle CYF$ are on opposite sides of transversal $\overleftrightarrow{EF}$. false

N) $\angle AXY$ and $\angle CYF$ are on the same side of transversal $\overleftrightarrow{EF}$. true

2. $\angle AXY$ and $\angle CYF$ are C) corresponding angles

   A) alternate exterior angles

   B) interior angles on the same side of the transversal

   C) corresponding angles

   D) alternate interior angles

SELECT, GRAB AND MOVE **point A**

3. What changes? The lines move but remain parallel.
4. What remains the same ? the measures $\angle AXY$ and $\angle CYF$: the lines remain parallel

SELECT GRAB AND DRAG **points B, C, D**

5. What changes? The lines move but remain parallel.
6. What remains the same ? the measures $\angle AXY$ and $\angle CYF$: the lines remain parallel

Fill in the blank:

7. In this exercise $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ were always parallel.
8. If two parallel lines are cut by a transversal then the corresponding angles are equal.