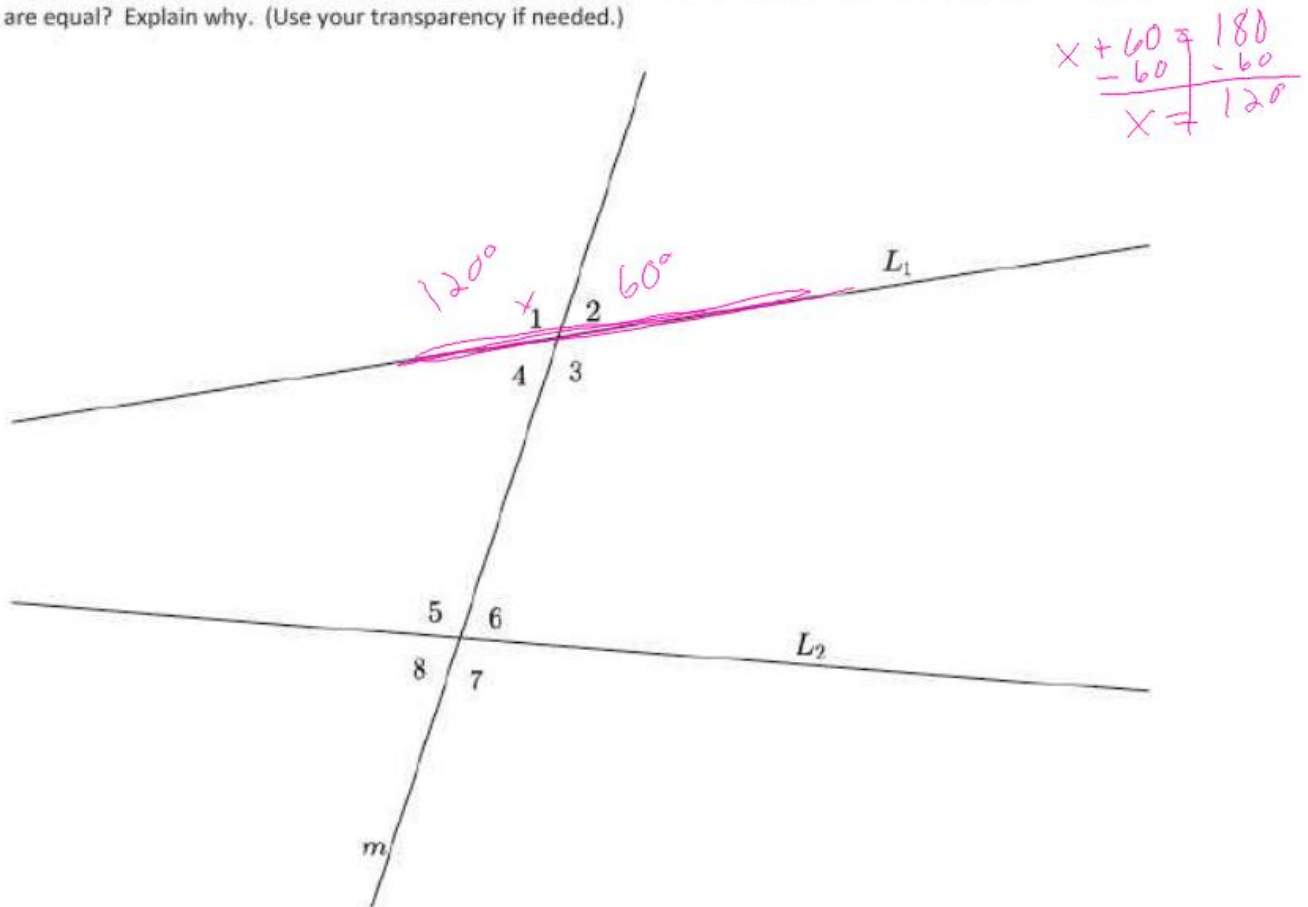


Lesson 12: Angles Associated with Parallel Lines

Classwork

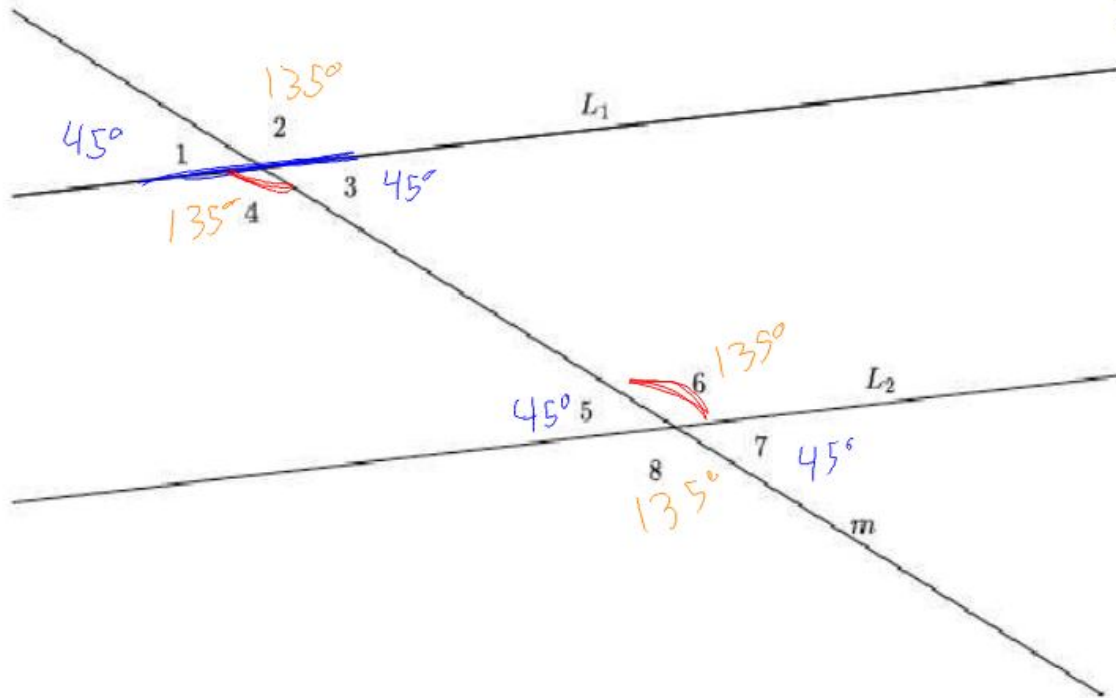
Exploratory Challenge 1

In the figure below, L_1 is not parallel to L_2 , and m is a transversal. Use a protractor to measure angles 1–8. Which, if any, are equal? Explain why. (Use your transparency if needed.)



Exploratory Challenge 2

In the figure below, $L_1 \parallel L_2$, and m is a transversal. Use a protractor to measure angles 1–8. List the angles that are equal in measure.



$$\begin{array}{r} x + 135 = 180 \\ - 135 \quad - 135 \\ \hline x = 45 \end{array}$$

- a. What did you notice about the measures of $\angle 1$ and $\angle 5$? Why do you think this is so? (Use your transparency if needed.)
 they have the same \angle measure. You can translate $\angle 1$ down to $\angle 5$ so that they match up, therefore they are congruent. $\angle 1 \cong \angle 5$ \angle corresponding \angle 's
- b. What did you notice about the measures of $\angle 3$ and $\angle 7$? Why do you think this is so? (Use your transparency if needed.) Are there any other pairs of angles with this same relationship? If so, list them.

- c. What did you notice about the measures of $\angle 4$ and $\angle 6$? Why do you think this is so? (Use your transparency if needed.) Is there another pair of angles with this same relationship?

$\angle 4 + \angle 6$ have the same \angle measures (135°). We can rotate $\angle 4$ down to $\angle 6$ to match them up, therefore $\angle 4 \cong \angle 6$

\angle Alternate interior \angle 's