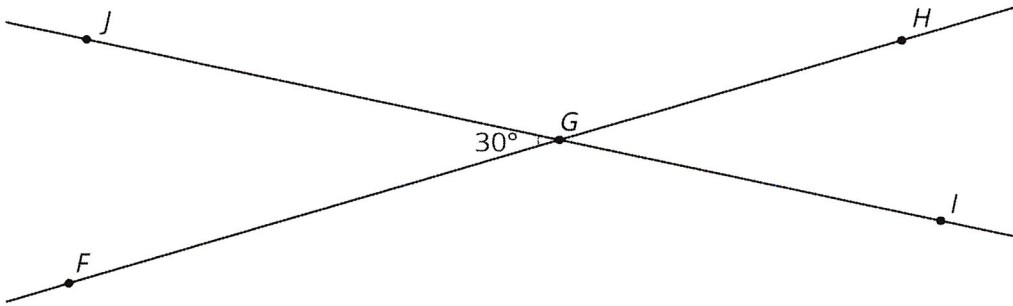


Math 8 –Unit 1–Transformation & Cong–Alternate Interior Angles		Lesson 14
<i>Students will be able to:</i>	<i>Have two parallel lines cut by a transversal, I can identify alternate interior angles and use that to find missing angle measurements.</i>	Date:

Let's explore why some angles are always equal.

Lesson 14.1: Angle Pairs

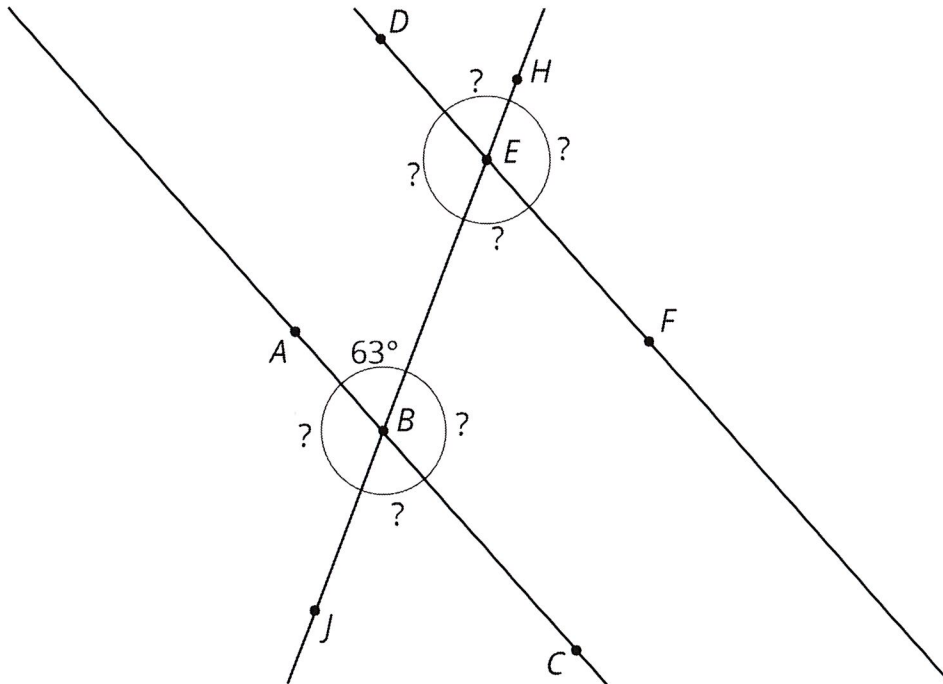
1. Find the measure of angle JGH . Explain or show your reasoning.



2. Find and label a second 30° degree angle in the diagram. Find and label an angle congruent to angle JGH .

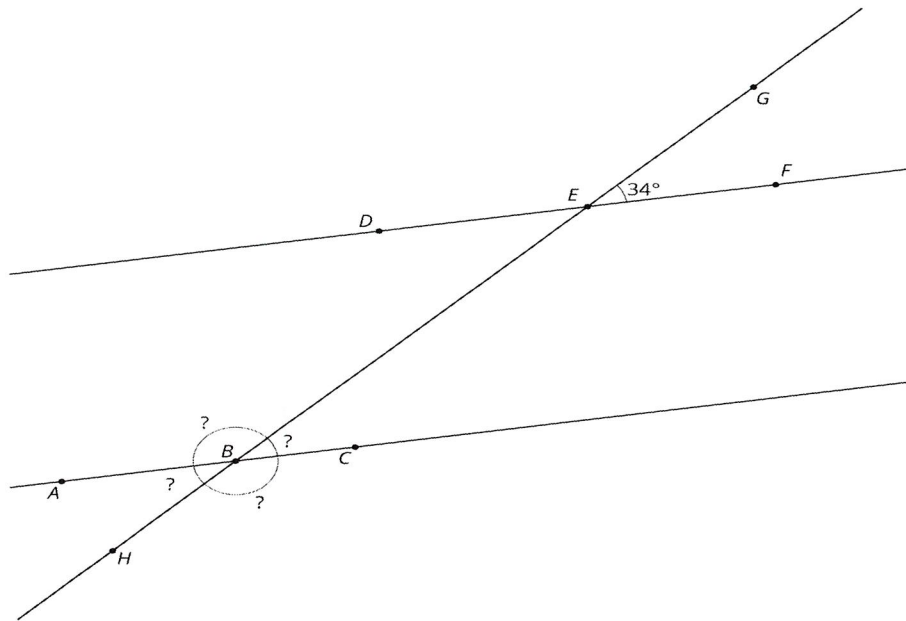
Lesson 14.2: Cutting Parallel Lines with a Transversal

Lines AC and DF are parallel. They are cut by transversal HJ .

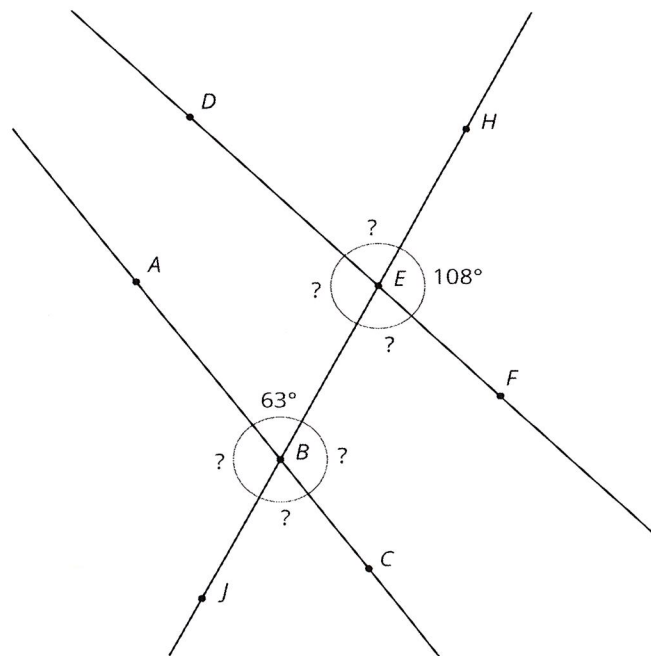


1. With your partner, find the seven unknown angle measures in the diagram. Explain your reasoning.
2. What do you notice about the angles with vertex B and the angles with vertex E ?

3. Using what you noticed, find the measures of the four angles at point B in the second diagram. Lines AC and DF are parallel.



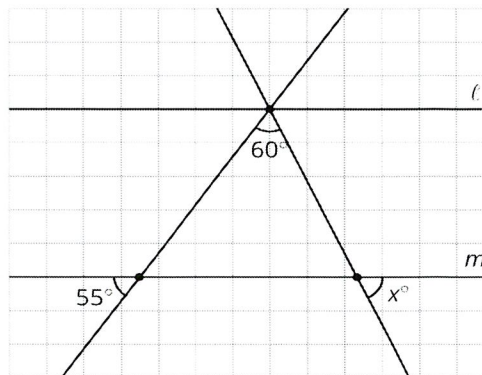
4. The next diagram resembles the first one, but the lines form slightly different angles. Work with your partner to find the six unknown angles with vertices at points B and E .



5. What do you notice about the angles in this diagram as compared to the earlier diagram? How are the two diagrams different? How are they the same?

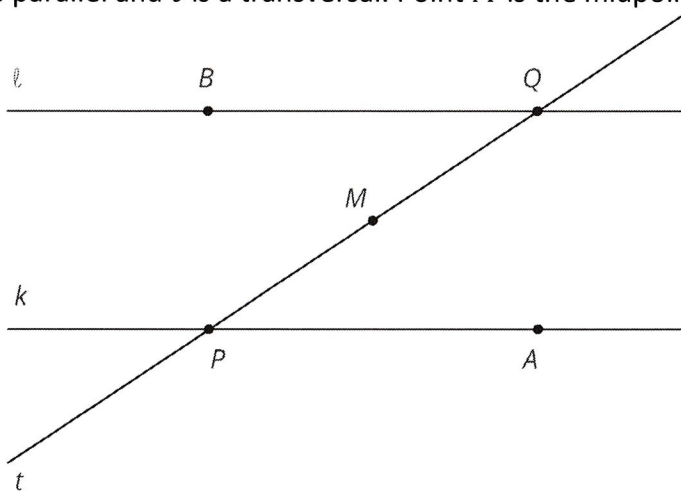
Are you ready for more?

Parallel lines ℓ and m are cut by two transversals which intersect ℓ in the same point. Two angles are marked in the figure. Find the measure x of the third angle.



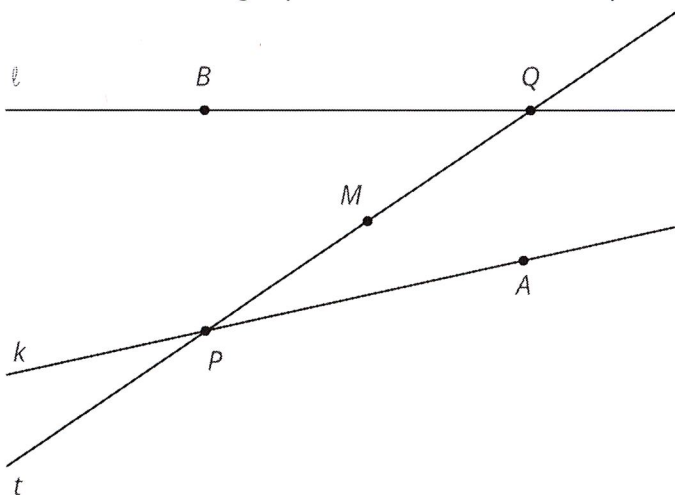
Lesson 14.3: Alternate Interior Angles Are Congruent

- Lines ℓ and k are parallel and t is a transversal. Point M is the midpoint of segment PQ .



Find a rigid transformation showing that angles MPA and MQB are congruent.

- In this picture, lines ℓ and k are no longer parallel. M is still the midpoint of segment PQ .



Does your argument in the earlier problem apply in this situation? Explain.