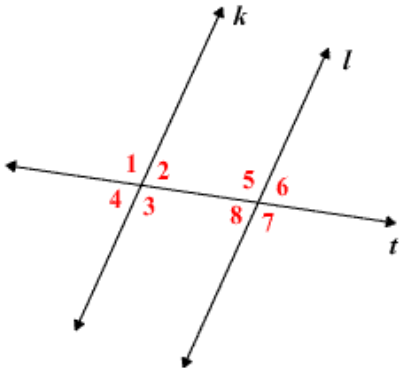
Name: Date: Period:

Critiquing Reasoning Problems

Note: *In the following problems, assume that any two lines that do not intersect are parallel.*

1. In the picture below, there are 8 angles. Jonathan thinks that angles < 1 and < 6 are congruent because they are alternate-exterior angles. Mariah thinks that angles < 1 and < 7 are congruent because they are alternate-exterior angles. Which one is correct? Explain why.



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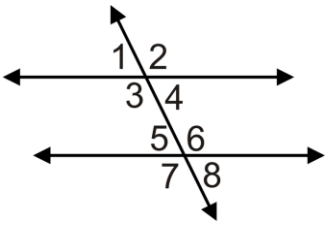
2. In the diagram below, Jacqueline thinks that angles < 3, < 4, < 5, and < 6 are all congruent. Josh disagrees, and thinks < 2, < 3, < 6, and < 7 are all congruent. Which one is correct? Explain why.



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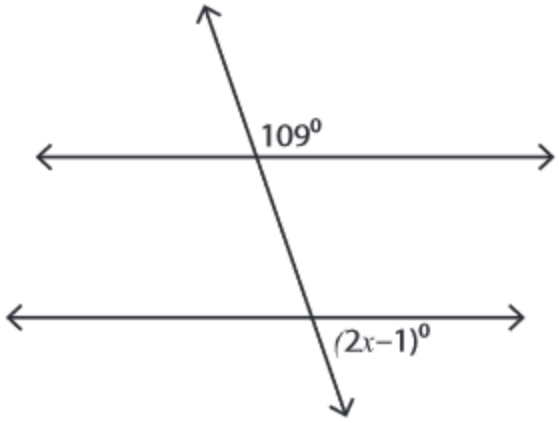
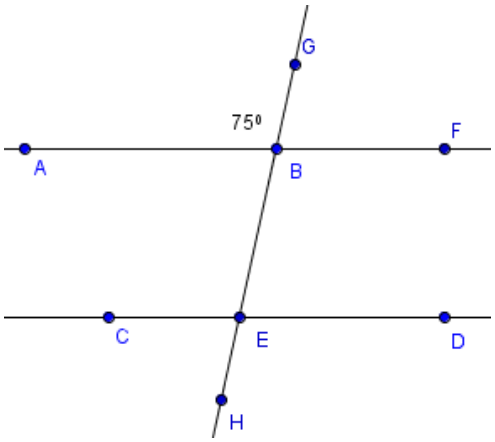
3. Given the following picture, Maria wants to use corresponding angles to set up the equation because corresponding angles are congruent. Aubrey wants to use same-side exterior angles because same-side exterior angles add up to 180°. Which one is correct? Explain why.



4. Josette and Calvin are both solving the following problem, but are getting different answers. Who has a better argument? Explain why.

Problem: Given that AF and CD are parallel, find the measure of < BED. Construct an argument that justifies your answer.



Josette: Because lines AF and CD are parallel, I know that the following pairs are corresponding: < ABG ≃ < CEB and < GBF ≃ < BED. Then, since m< ABG = 75°, I know m < CEB=75°. Since < CEB forms a linear pair with an angle that equals 75°, I know that m< BED is 180°-75°=105 °.

Calvin: AF and CD are parallel, which means their angles are all equal. Because m< ABG = m< CEB, I know that m< GBF = m< BED. I did 180°-75°=105° and m< BED = 105° because m< CEB = 75°. I used that the angles add up to 180°because they are supplementary angles.