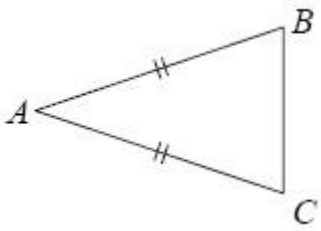
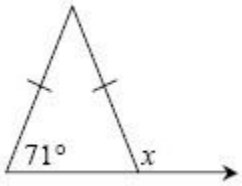
- **2-19.** In problem 2-11, you determined that because an isosceles triangle has reflection symmetry, then it must have two angles that are congruent.

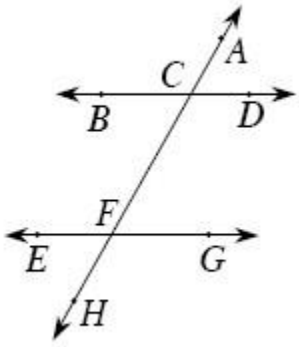
1. How can you tell which angles are congruent? For example, in the diagram at below, which angles must have equal measure? Name the angles and explain how you know.



2. **Examine** the diagram for part (a). If you know that $m\angle B + m\angle C = 124°$, then what is the measure of $\angle B$? Explain how you know.
3. Use this idea to find the value of x in the diagram below. Be sure to show all work.



- **2-31.** Looking at the diagram below, John says that $m\angle BCF = m\angle EFH$.

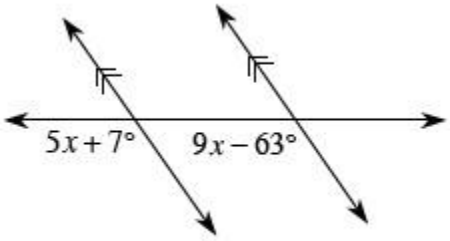


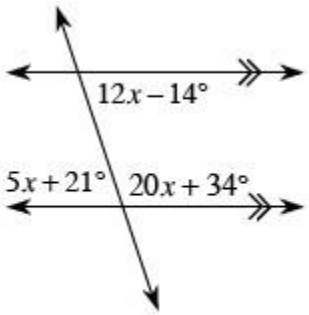
1. Do you agree with John? Why or why not?
2. Jim says, "You can't be sure those angles are equal. An important piece of information is missing from the diagram!" What is Jim talking about?

Note:

This stoplight icon will appear periodically throughout the text. Problems with this icon display common errors that can be made. Be sure not to make the same mistakes yourself!

- **2-32.** Use your knowledge of angle relationships to solve for x in the diagrams below. **Justify** your solutions by naming the geometric relationship.

1. 

2. 

- **2-33.** On graph paper, draw line segment $\overline{AB}$ if A (6, 2) and B (3, 5).
    1. Reflect $\overline{AB}$ across the line $x = 3$ and connect points A and A'. What shape is created by this reflection? Be as specific as possible.
    2. What polygon is created when $\overline{AB}$ is reflected across the line $y = -x + 6$ and all endpoints are connected to form a polygon?