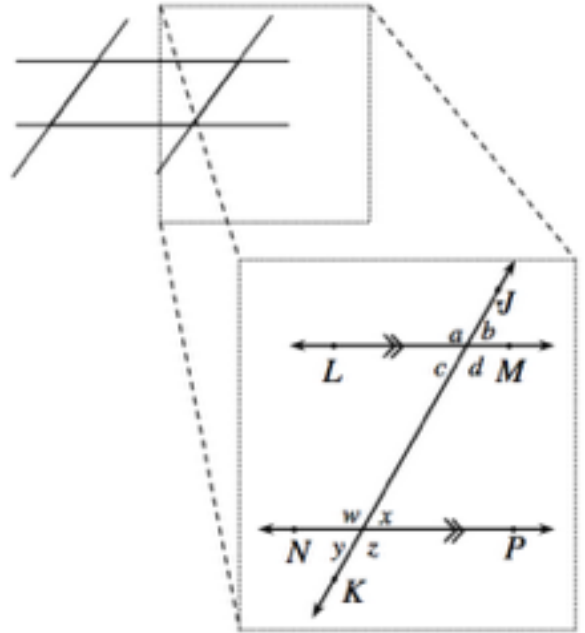


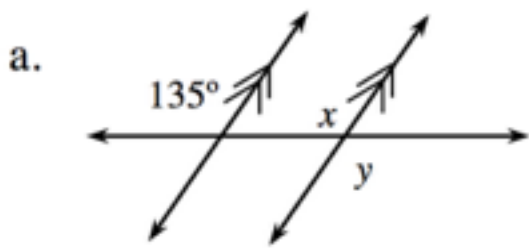
Julia wants to learn more about the angles in Marcos's diagram and has decided to focus on just a part of his tiling. An enlarged view of that section is shown in the image below right, with some points and angles labeled.

1. A line that crosses two or more other lines is called a **transversal**. In Julia's diagram, name the line that is the *transversal*.

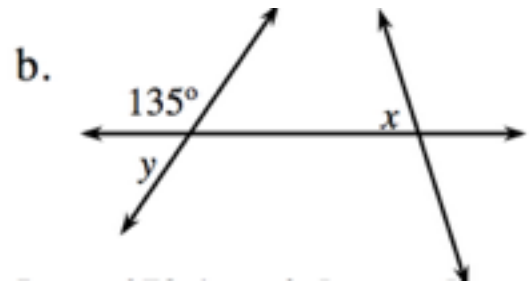


2. Trace $\angle x$ on tracing paper and shade its interior. Then translate $\angle x$ by sliding the tracing paper along the transversal until it lies on top of another angle and matches it exactly. Which angle in the diagram corresponds with $\angle x$?
3. In this diagram, $\angle x$ and $\angle b$ are called **corresponding angles** because they are in the same position at two different intersections of the transversal. What is the relationship between the measures of angles x and b ? Must one be greater than the other, or must they be equal? Explain how you know.
4. Name all the other pairs of corresponding angles you can find in Julia's diagram.
5. Suppose $b = 60^\circ$. Use what you know about vertical, supplementary, and corresponding angle relationships to find the measures of all the other angles in Julia's diagram.

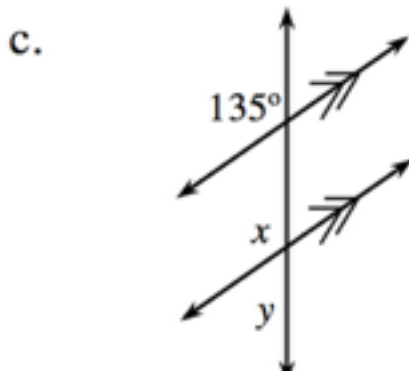
6. Frank wonders whether corresponding angles *always* have equal measure. For parts (a) through (d) below, use tracing paper to decide if corresponding angles have the same measure. Then determine if you have enough information to find the measures of x and y . If you do, find the angle measures and state the relationship.



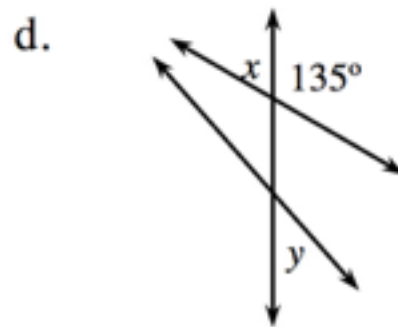
$x =$ $y =$



$x =$ $y =$



$x =$ $y =$



$x =$ $y =$

7. Do corresponding angles always have equal measure? If not, when are their measures equal?

8. Conjectures come in the form, “*if..., then...*”. A statement in if-then form is called a **conditional statement**. Make a conjecture about corresponding angles by completing this conditional statement:

If lines are parallel, then...
