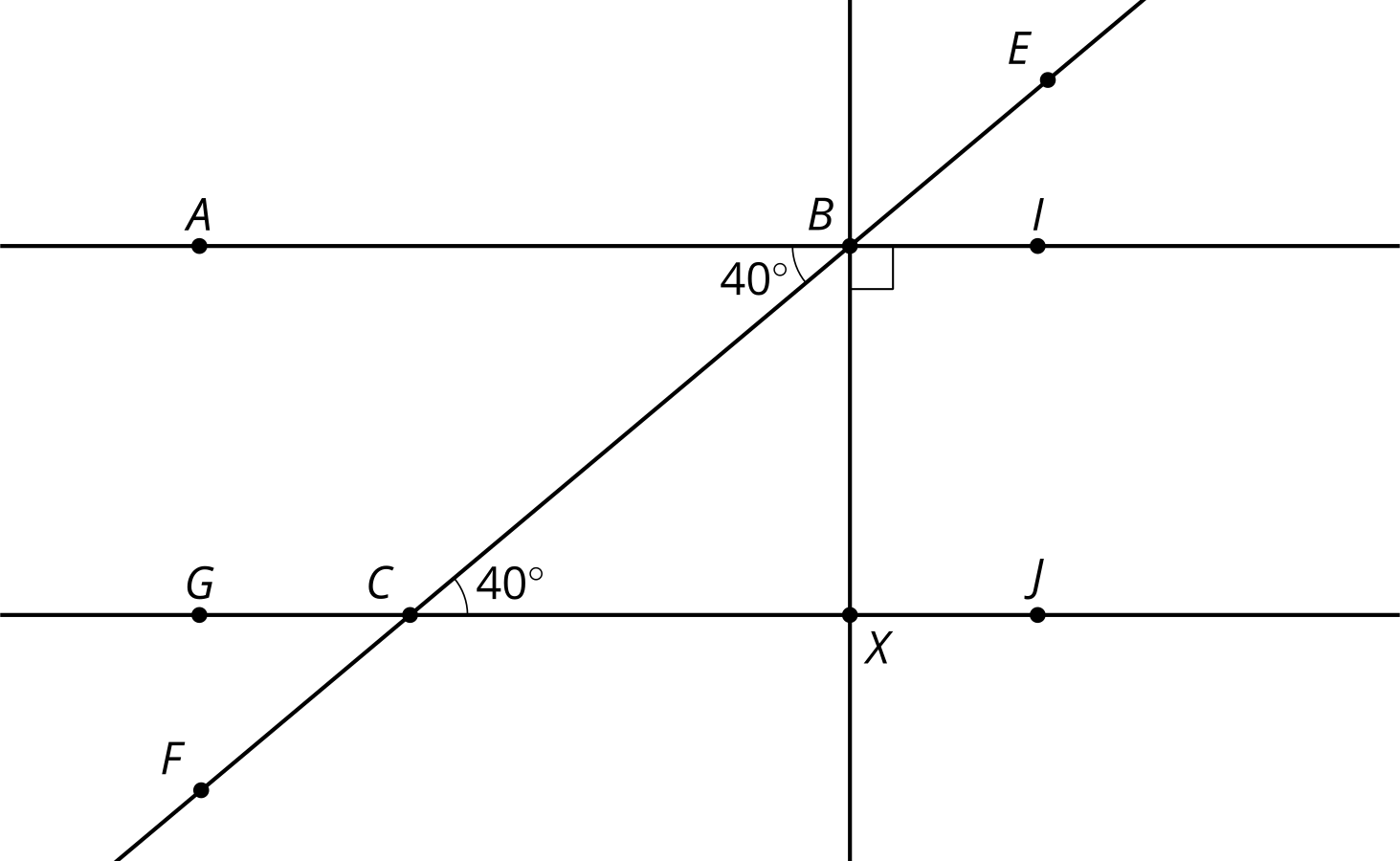
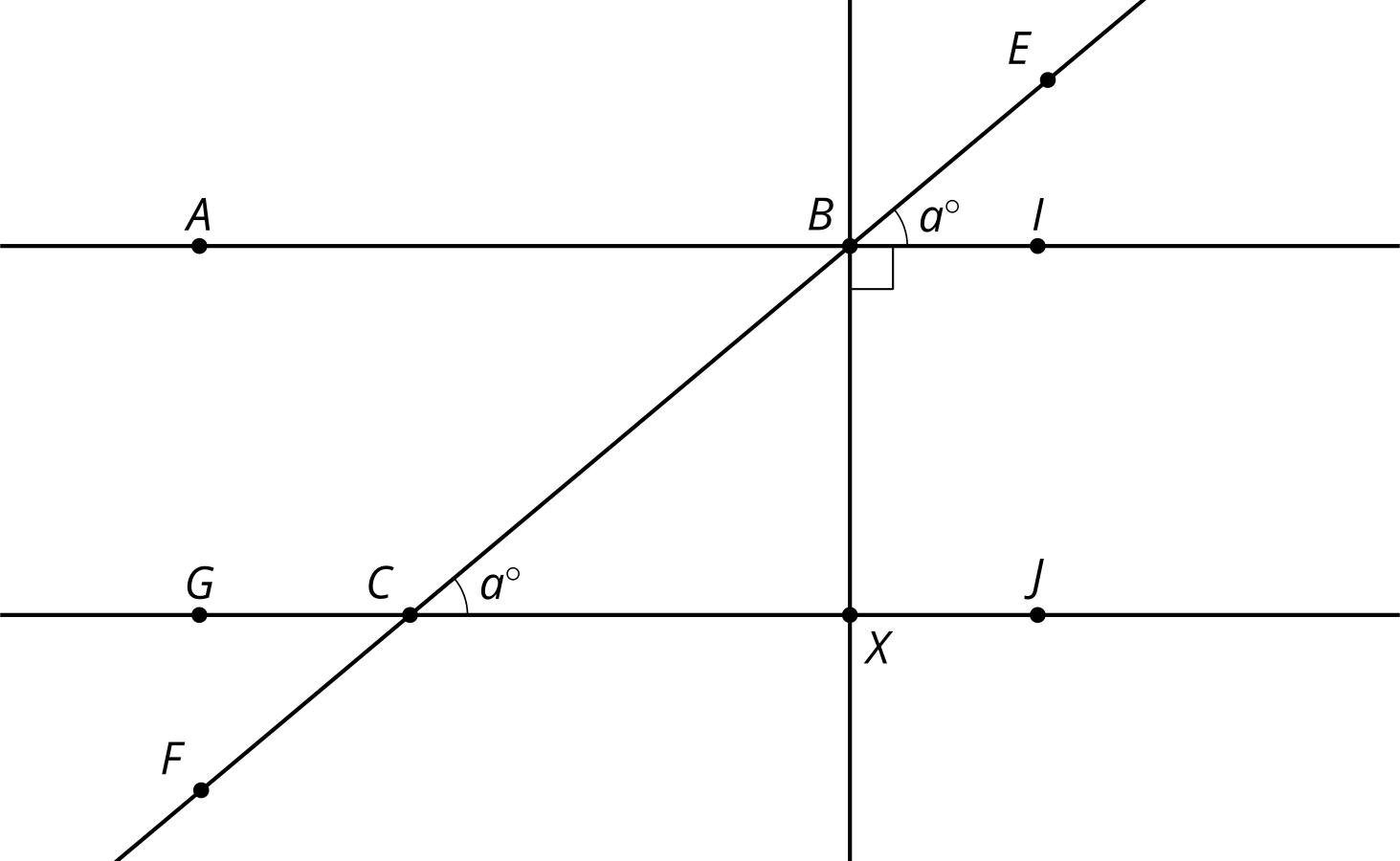
### Lesson 20 Practice Problems

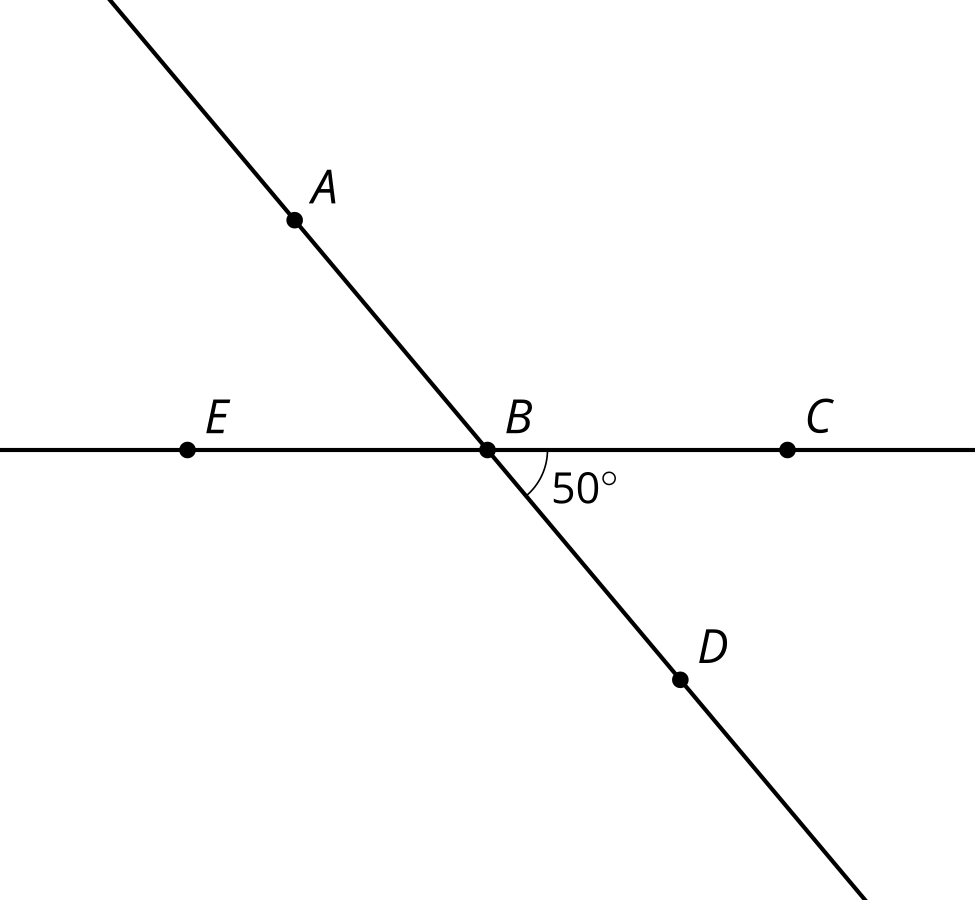
1. Priya: I bet if the alternate interior angles are congruent, then the lines will have to be parallel.

* Han: Really? We know if the lines are parallel then the alternate interior angles are congruent, but I didn't know that it works both ways.
* Priya: Well, I think so. What if angle  and angle are both 40 degrees? If I draw a line perpendicular to line through point , I get this triangle. Angle would be 50 degrees because . And because the angles of a triangle sum to 180 degrees, angle is 90 degrees. It's also a right angle!
* Han: Oh! Then line and line are both perpendicular to the same line. That's how we constructed parallel lines, by making them both perpendicular to the same line. So lines and must be parallel.
* 
  1. Label the diagram based on Priya and Han's conversation.
  2. Is there something special about 40 degrees? Will any 2 lines cut by a transversal with congruent alternate interior angles, be parallel?

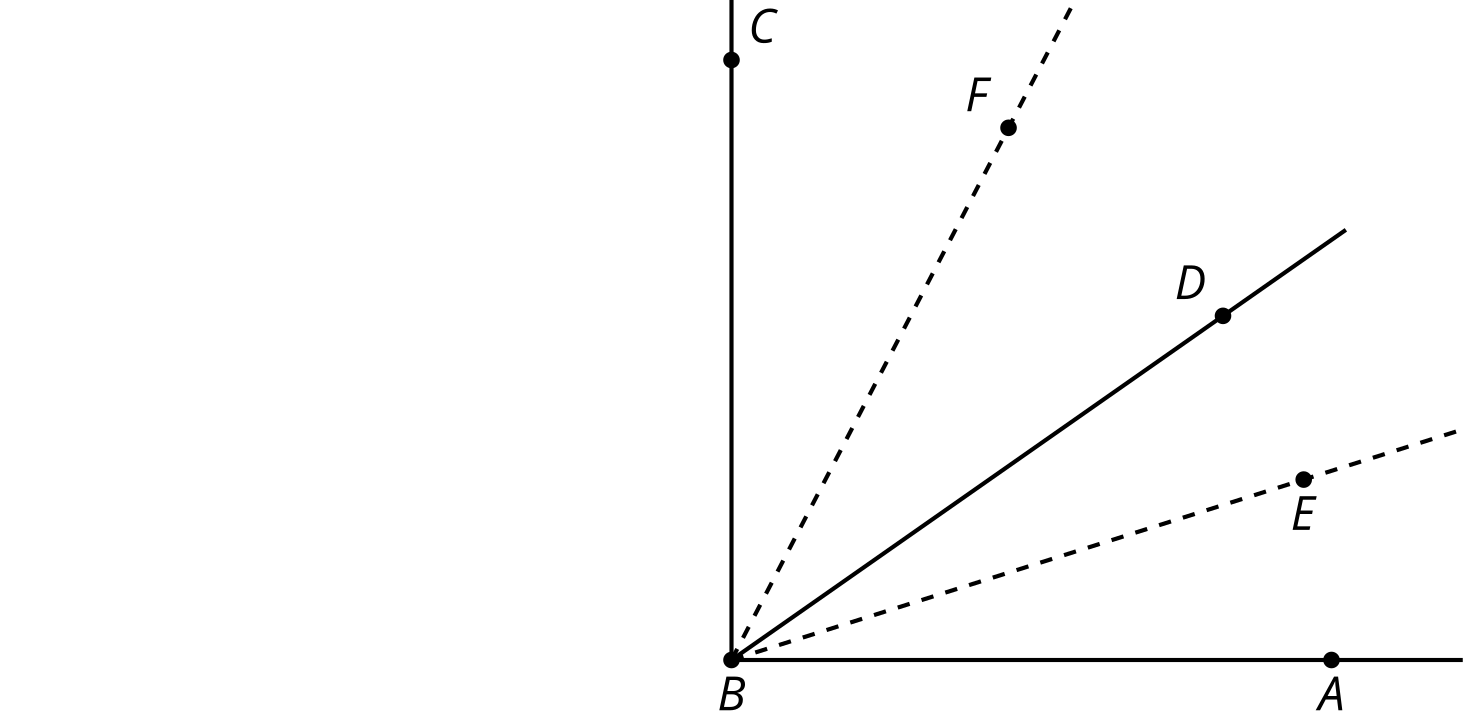
1. Prove lines and  are parallel.

* 

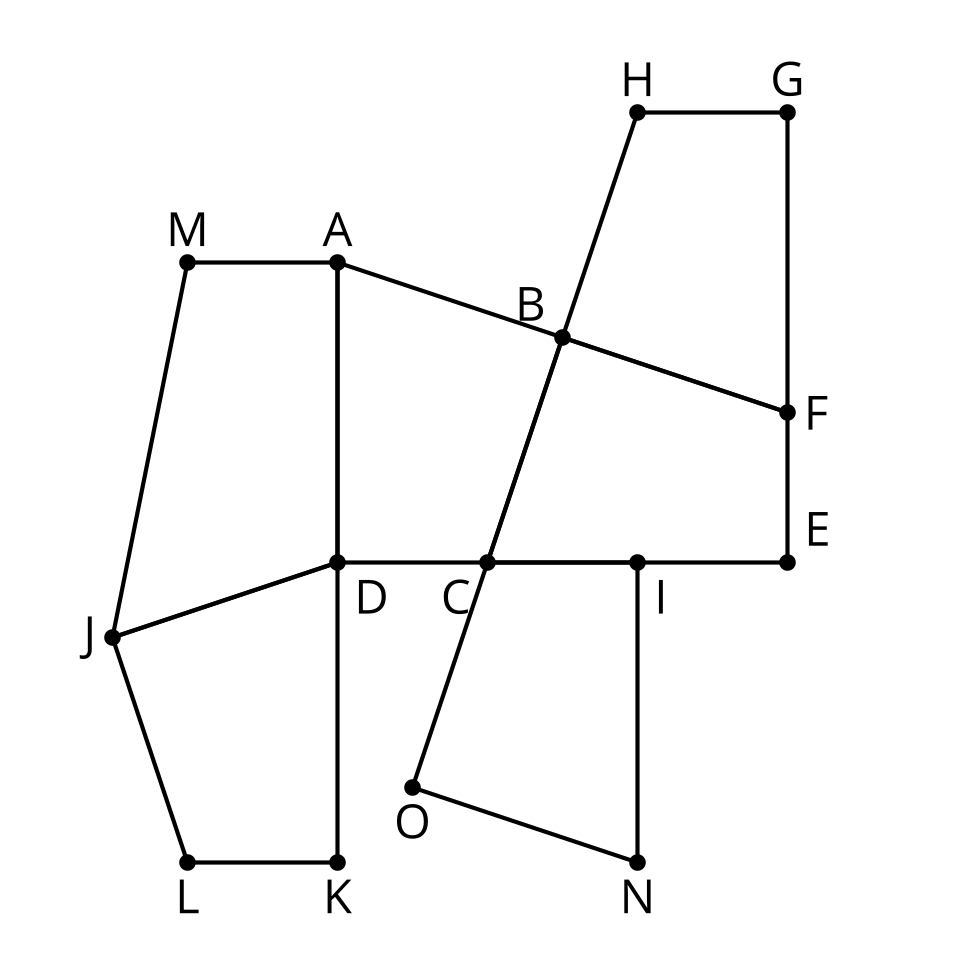
1. What is the measure of angle ?

* 
* (From Unit 1, Lesson 19.)

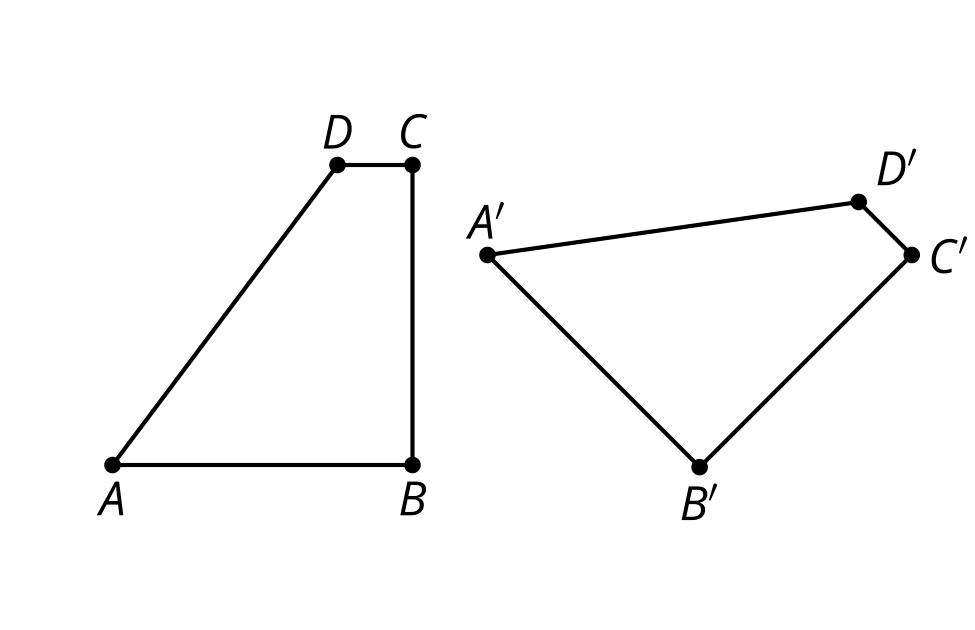
1. Lines and are perpendicular. The dashed rays bisect angles and . Explain why the measure of angle is 45 degrees.

* 
* (From Unit 1, Lesson 19.)

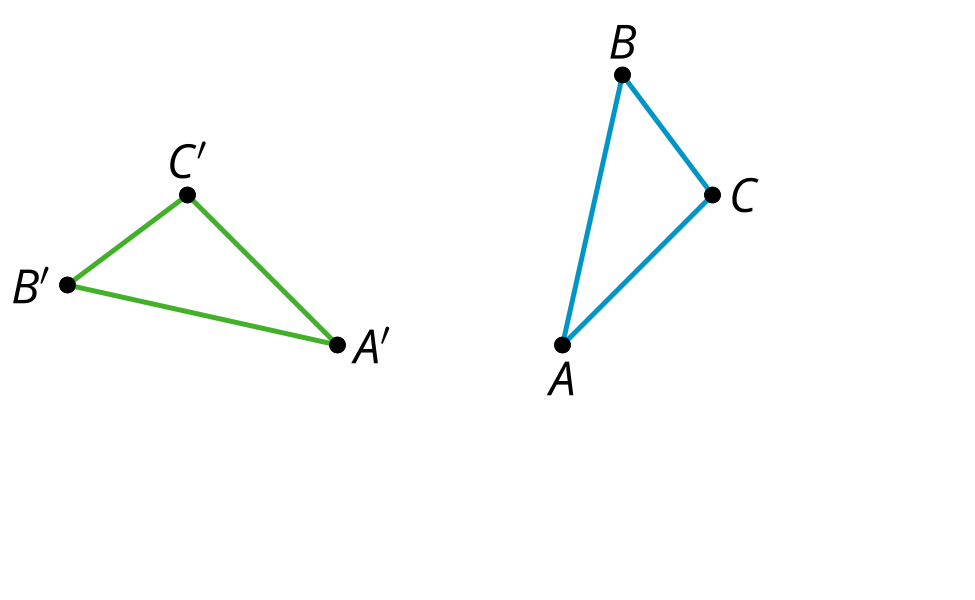
1. Identify a figure that is *not* the image of quadrilateral after a sequence of transformations. Explain how you know.

* 
* (From Unit 1, Lesson 18.)

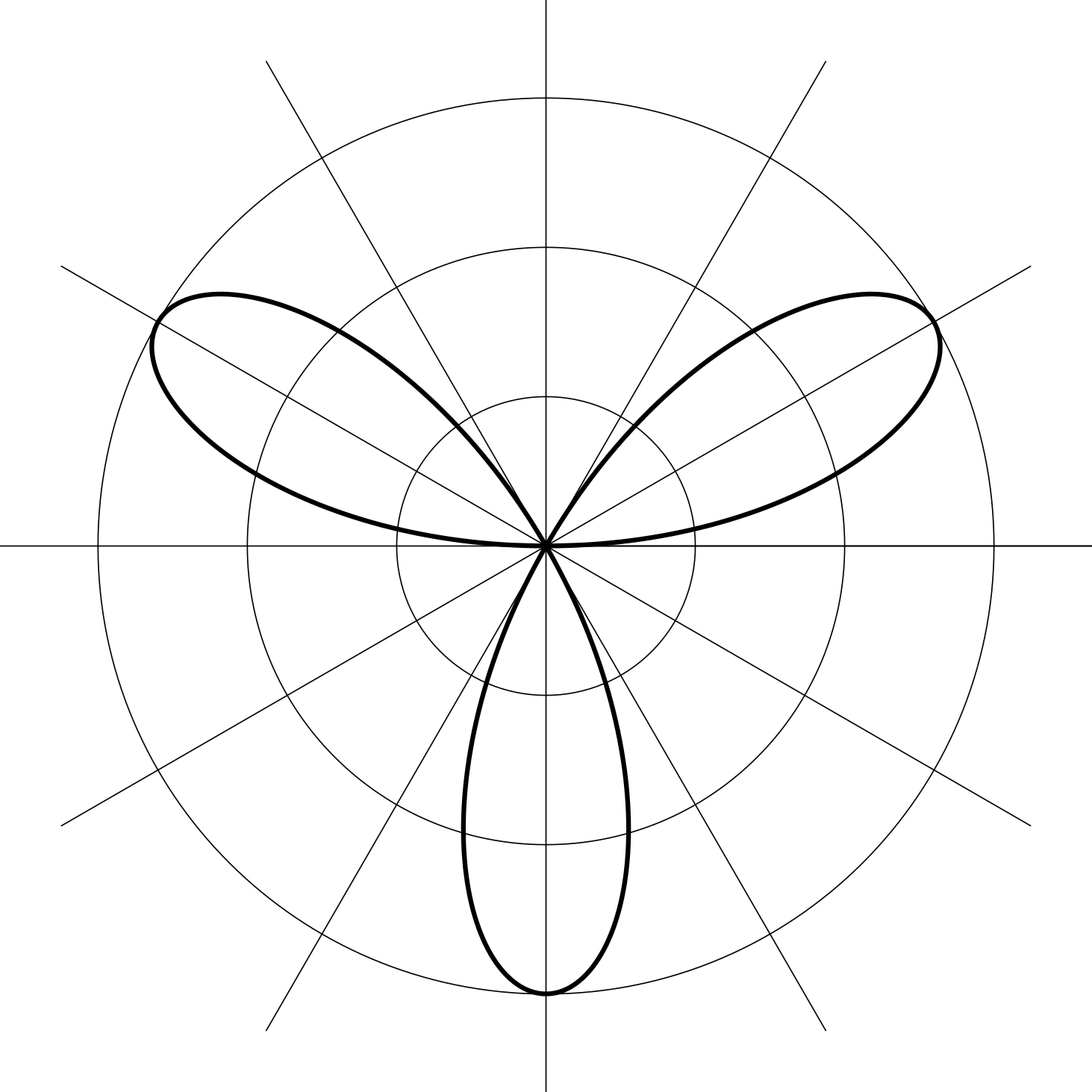
1. Quadrilateral is congruent to quadrilateral . Describe a sequence of rigid motions that takes to , to , to , and to .

* 
* (From Unit 1, Lesson 17.)

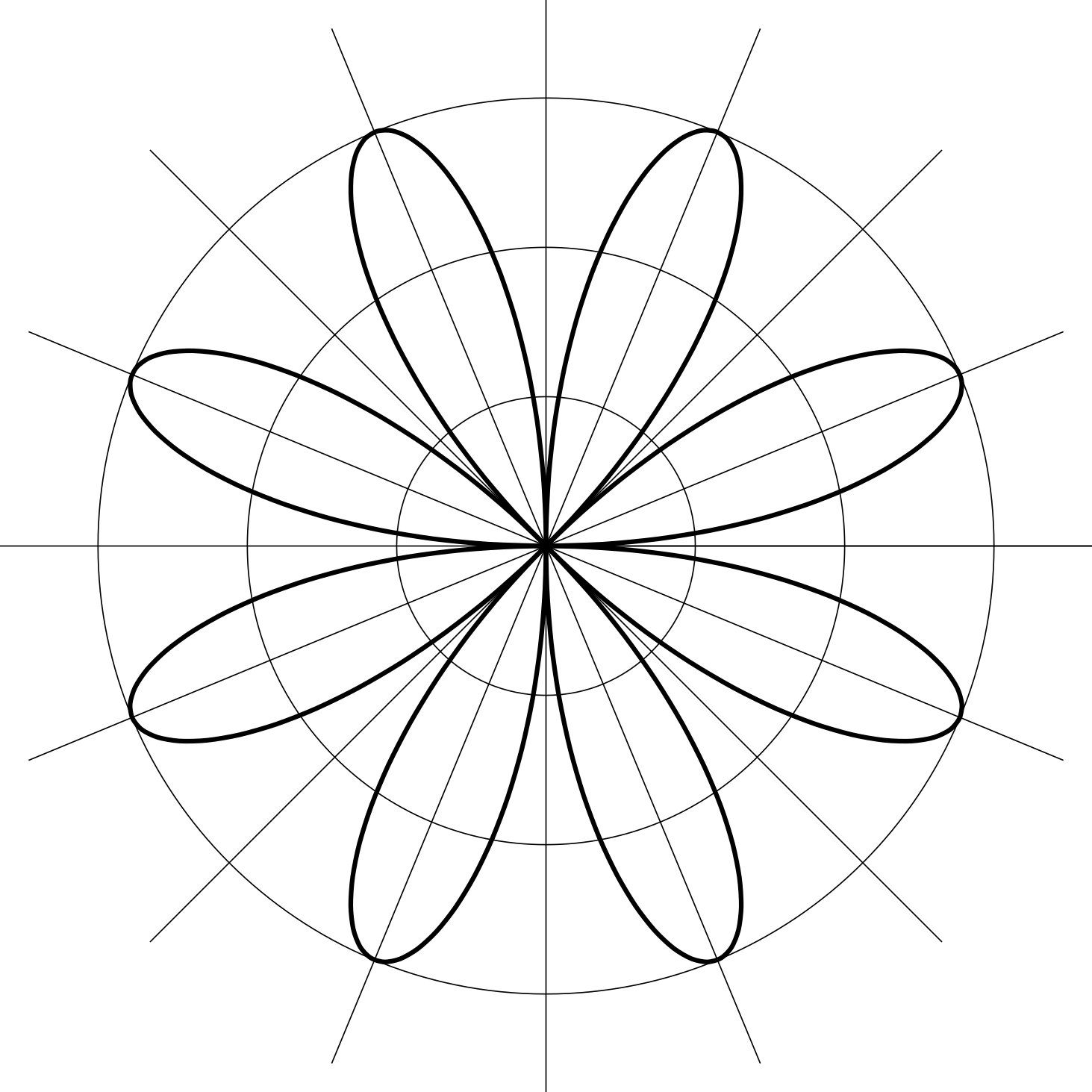
1. Triangle is congruent to triangle . Describe a sequence of rigid motions that takes to , to , and to .

* 
* (From Unit 1, Lesson 17.)

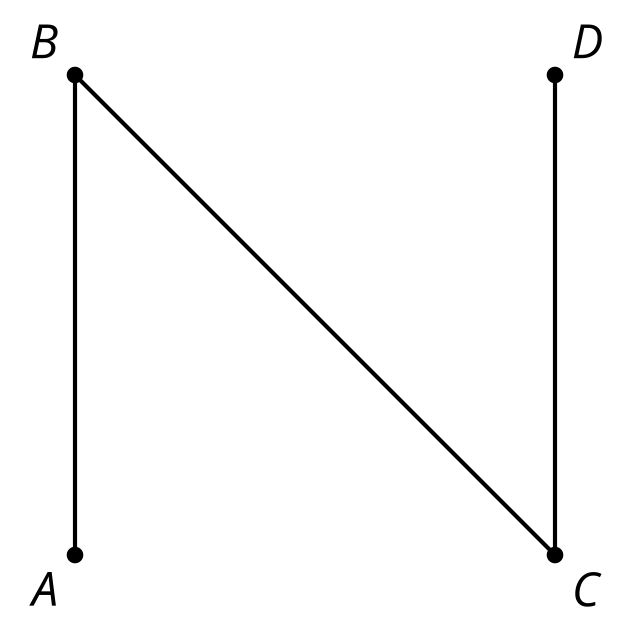
1. Identify any angles of rotation that create symmetry.

* 
* (From Unit 1, Lesson 16.)

1. Select **all**the angles of rotation that produce symmetry for this flower.

* 
  1. 45
  2. 60
  3. 90
  4. 120
  5. 135
  6. 150
  7. 180
* (From Unit 1, Lesson 16.)

1. Three line segments form the letter N. Rotate the letter N clockwise around the midpoint of segment by 180 degrees. Describe the result.

* 
* (From Unit 1, Lesson 14.)



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