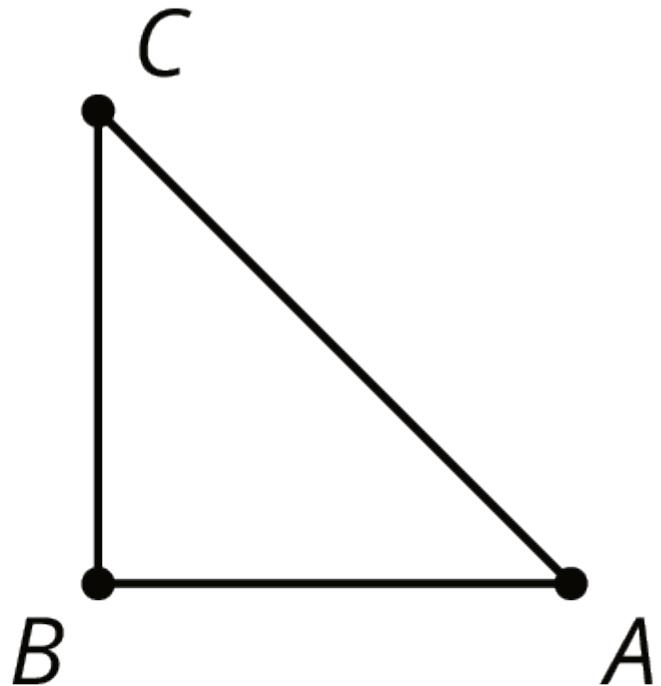


# Unit 1 Lesson 8: Rotation Patterns

## 1 Building a Quadrilateral (Warm up)

### Student Task Statement

Here is a right isosceles triangle:

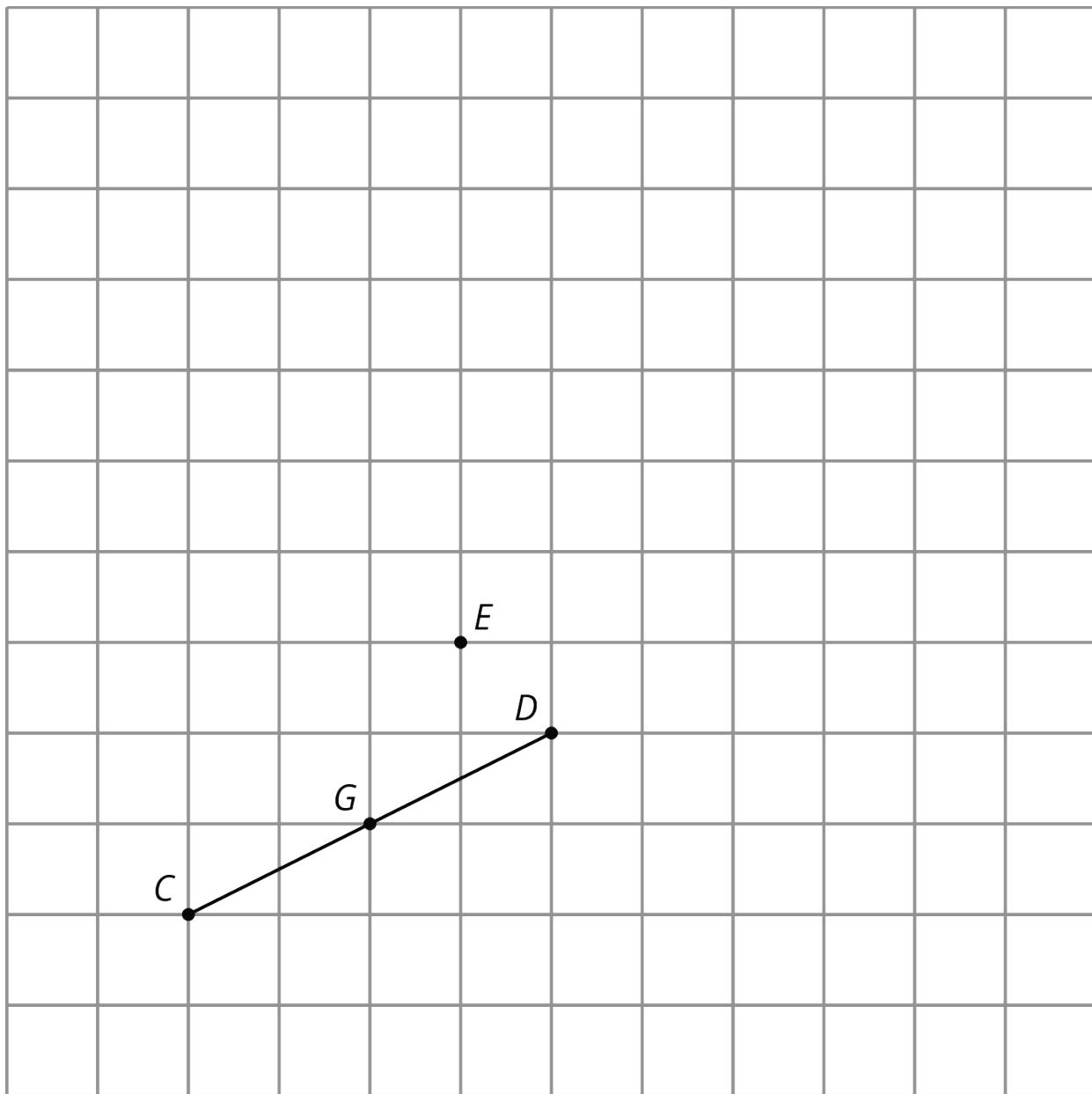


1. Rotate triangle  $ABC$  90 degrees clockwise around  $B$ .
2. Rotate triangle  $ABC$  180 degrees clockwise round  $B$ .

3. Rotate triangle  $ABC$  270 degrees clockwise around  $B$ .
4. What would it look like when you rotate the four triangles 90 degrees clockwise around  $B$ ? 180 degrees? 270 degrees clockwise?

## 2 Rotating a Segment

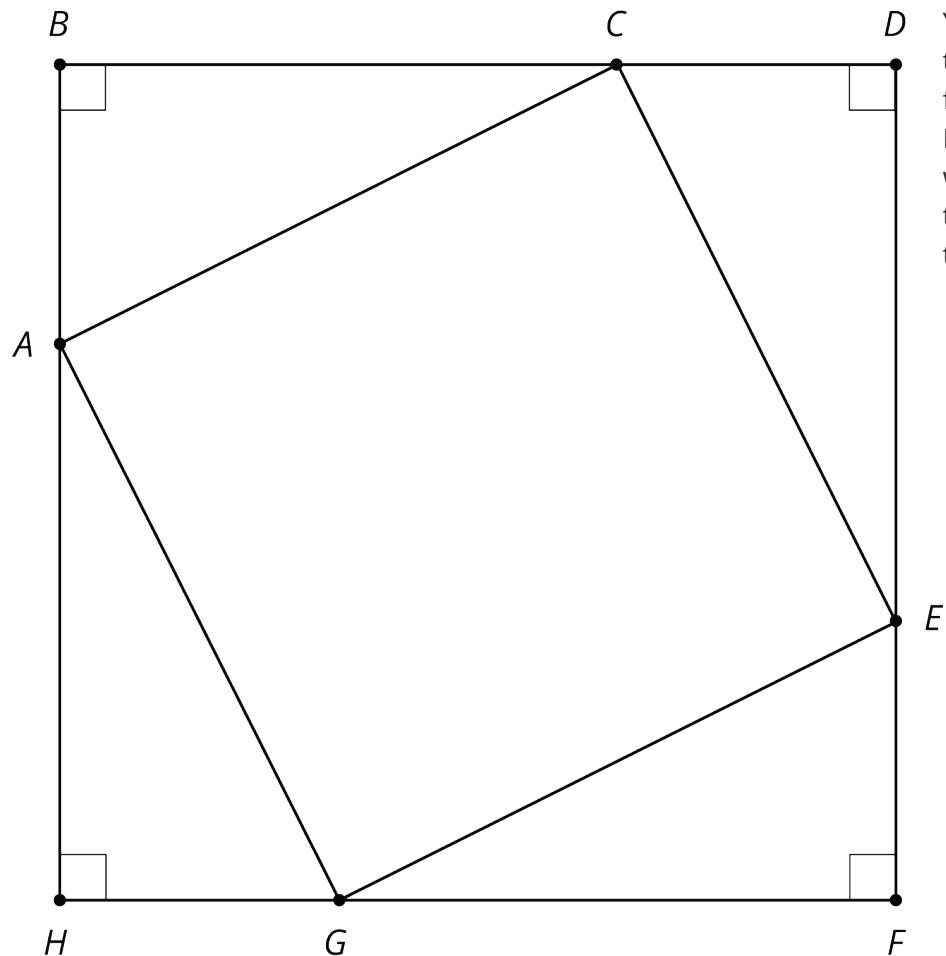
### Student Task Statement



1. Rotate segment  $CD$  180 degrees around point  $D$ . Draw its image and label the image of  $C$  as  $A$ .
2. Rotate segment  $CD$  180 degrees around point  $E$ . Draw its image and label the image of  $C$  as  $B$  and the image of  $D$  as  $F$ .
3. Rotate segment  $CD$  180 degrees around its midpoint,  $G$ . What is the image of  $C$ ?
4. What happens when you rotate a segment 180 degrees around a point?

### 3 A Pattern of Four Triangles

#### Student Task Statement



You can use rigid transformations of a figure to make patterns. Here is a diagram built with three different transformations of triangle  $ABC$ .

1. Describe a rigid transformation that takes triangle  $ABC$  to triangle  $CDE$ .
2. Describe a rigid transformation that takes triangle  $ABC$  to triangle  $EFG$ .
3. Describe a rigid transformation that takes triangle  $ABC$  to triangle  $GHA$ .
4. Do segments  $AC$ ,  $CE$ ,  $EG$ , and  $GA$  all have the same length? Explain your reasoning.