## 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.



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