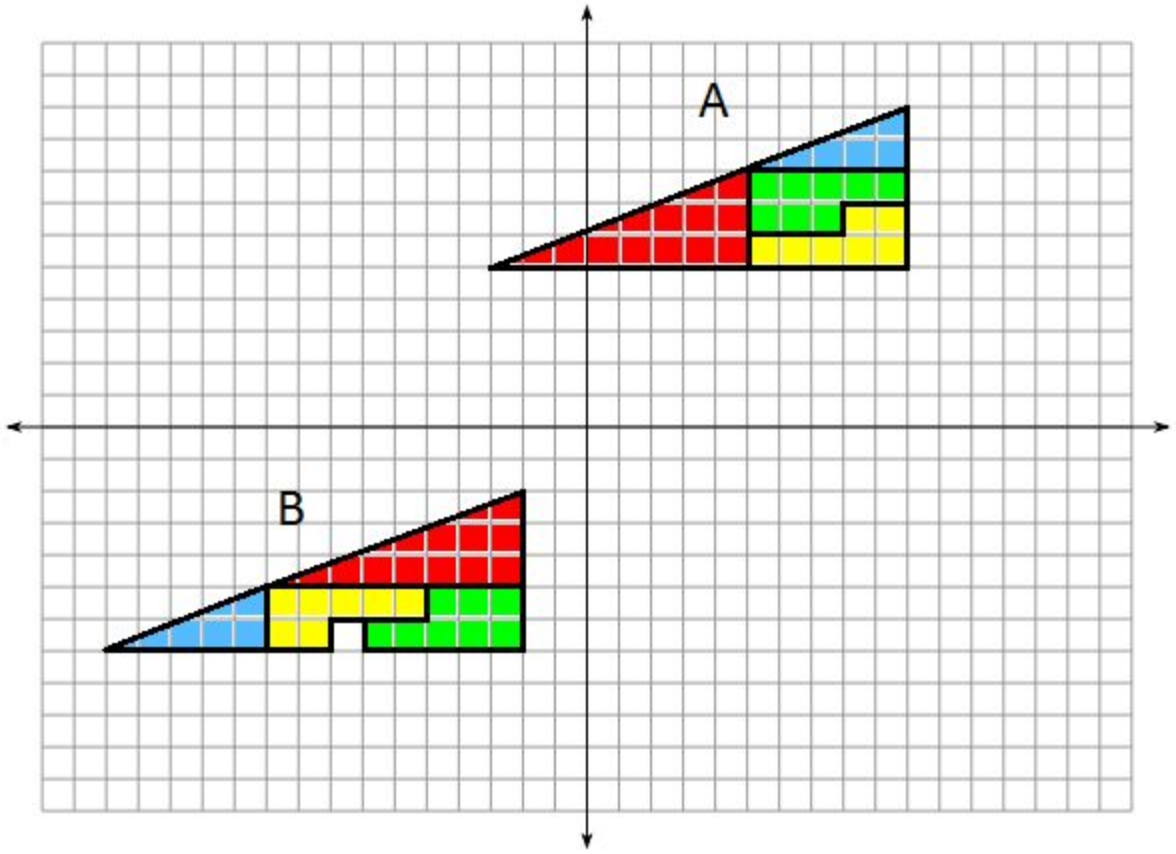
Missing Square

Name: _____ Date: _____

Figure B was created by using transformations on each of the colored polygons from Figure A.

Malachi, Shai, and Sabrina are confused because it looks like Figure B has less area than Figure A.

Your task is to help Malachi, Shai, and Sabrina investigate how this is possible.



1. Choose **two** polygon pieces. Describe the specific transformations that could map each of those colored polygons from Figure A to Figure B.

Polygons	**Transformations from Figure A to Figure B**
Red	
Blue	
Yellow	
Green	

2. Malachi says, “This is *weird.* Why is there a hole in Figure B? The yellow or green piece must have changed in size between Figure A and B.” Explain why you agree or disagree with Malachi using words.

3. Shai wonders, “What about the red and blue triangle pieces? Do we know if they are similar or congruent?” Show that the blue and red triangles are similar, congruent, or neither using words and transformations.

4. Sabrina asks, “Hold on. What can those red and blue triangles tell us about the slope of the line that passes through Point C and Point E in my drawing?”

Do points *c*, *d*, and *e* all exist on the same line? Explain why or why not using words and triangles.

5. Figure B was created by using transformations on each of the colored polygons from Figure A. Why do you think it looks like Figure B has less total area than Figure A?