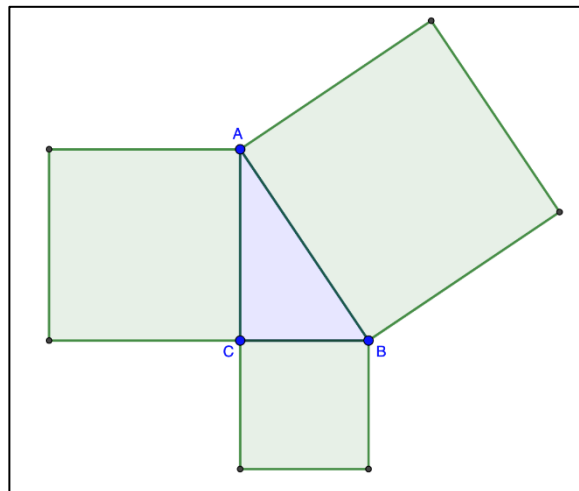CONSTRUCTION NOTES To Create Figure:

Open up GeoGebra Classic in Geometry View.

In SETTINGS Global, set Labeling to "No New Objects"

1. Use the **Segment** tool to create a segment.

2. Use the **Perpendicular** tool to construct a perpendicular line through one endpoint of the segment. Put a **Point On** that line.

3. Use the **Triangle** tool to create a right triangle from original endpoints of the segment, and new point on the perpendicular line.

4. Construct squares on each side of the right triangle.
   - Construct perpendiculars at each vertex.

   - Construct a **Circle** centered at one vertex with radius point at the other endpoint of a side.

   - At the intersection point of the circle and the perpendicular, construct another perpendicular for the last side of the square.

   - Use the **Polygon** tool to create the square.
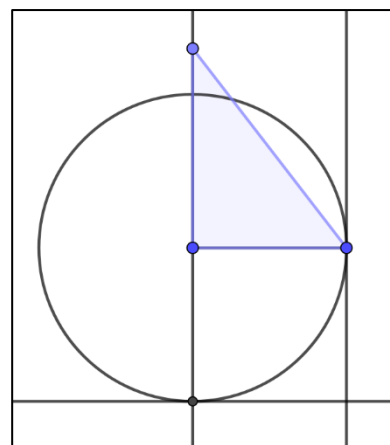
5. Hide all the perpendicular lines and circles.

6. Use the **Distance or Length** tool to measure the three sides of the triangle.
   *Click on each side to avoid labels.*

7. Use the **Area** tool to measure the areas of the squares.

4. In the ALGEBRA VIEW, calculate the value of the sum of the two smaller squares' areas. Note the variable given for this result.

5. Choose the **Text** tool, and click on the screen.
- Type "Sum of Squares ="
- Click on Advanced
- Click on ⬡ and choose the GeoGebra object for whichever variable is the sum of squares.
- Click Preview and OK.

2023 Karen D. Campe