Lesson 9 – Investigation 1

Note: this question isn't self-marking… you'll need to get your teacher to review what you've done.

Stained glass windows are made by joining small pieces of glass together with lead. Simple windows are made with patterns of squares and diamonds. However there are no limits on the shapes in modern windows.

A diagram of part of the stained glass window in the local church is shown below. There is a vertical crack in the window from the top to the bottom. The local glazier has been asked to repair it.

To prevent further cracking, the church has requested that the window be cut into four sections of more than 0.1 m², with at least one of the sections not a triangle.

You need to write a report describing how the window can be divided. To do this you will:
- find the length of the came required to repair the vertical crack
- demonstrate that the window can be divided into four sections of more than 0.1 m² and show one possible way of doing this.

You need to clearly communicate your method using appropriate mathematical statements so that the glazier can easily verify the dimensions of the sections.

Diagram of part of the stained glass window

Diagram not to scale