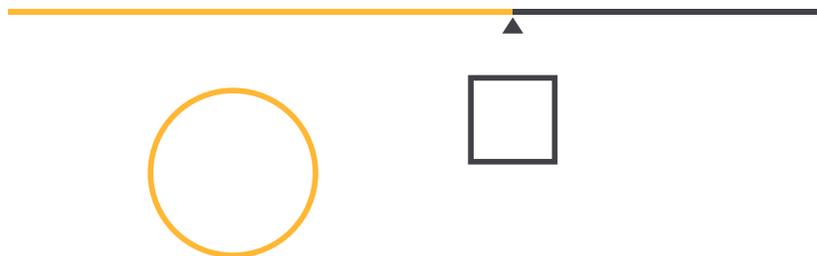


The Wire Problem - A Calculus Approach

The objective of this activity is to optimize the area formed when a wire of a given length is cut and used to create two shapes.

A wire that is 40 cm long will be used to form a circle, a square, or both. The wire may be cut so that one section is used to create a circle and the other section is used to create a square.



How should the wire be used to form shapes with a maximum combined area? How much of the wire should be used to create the circle? How much should be used to create the square?