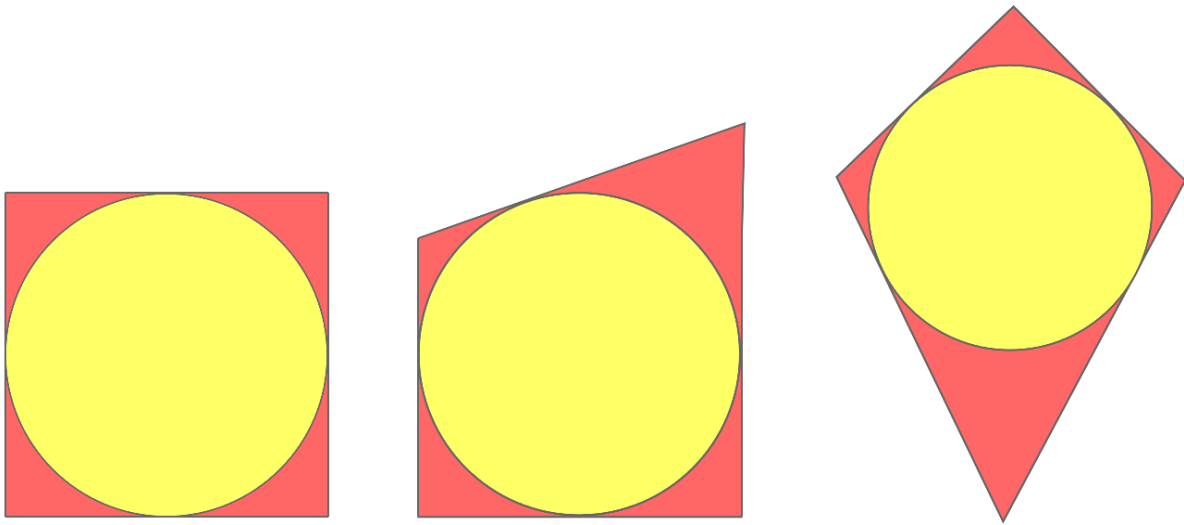


You may have come across the idea of a cyclic quadrilateral, where it is possible to draw a circle around the quadrilateral so that the circumference passes through all four vertices of the shape.

A **tangential quadrilateral** is one where it is possible to draw a circle inside it so that the circumference just touches all four sides of the shape.

Here are some examples of tangential quadrilaterals:



**For each of the following types of quadrilaterals, decide whether it is always, sometimes or never possible to construct a circle inside which just touches all four sides:**

- Square
- Rectangle
- Rhombus
- Parallelogram
- Kite
- Trapezium

If you decide always or never, you need to justify your decision with a convincing argument.

If you decide sometimes you need to be precise about when it is possible and when it is not possible, and why.