

Area of a Circle

This method of discovering the area of a circle was given in a 13th century commentary to the Babylonian Talmud.

A circle is cut into thin rings.

A cut is made from the circumference to the centre (shown by the black line).

The rings are "straightened" to make a "triangle".

1. Explain why the area of the triangle is given by:

$$\text{Area} = \text{Circumference} \times \text{Radius} \div 2$$

2. Explain why the area of the circle is given by:

$$\text{Area} = \text{Circumference} \times \text{Radius} \div 2$$

3. Show how this is equivalent to the "standard" formula for the area of a circle:

$$A = \pi r^2$$

