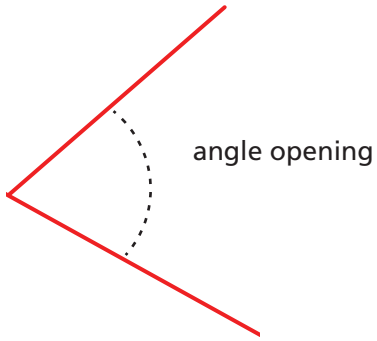
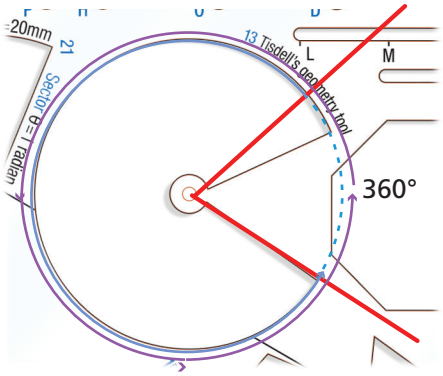
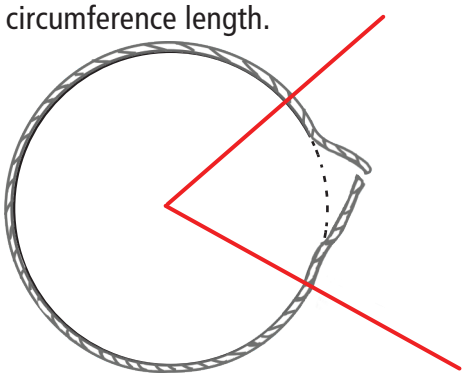
Measuring the openness of the opening in an angle. A step by step guide



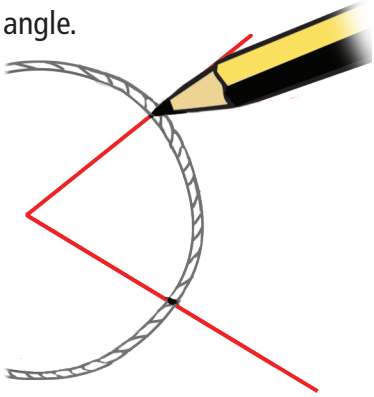
Step 1: Make the angle part of a circle using your Mathomat TGT.



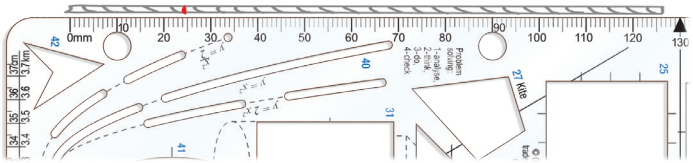
Step 2: Use string to measure the full circumference of the circle. Cut your string so it is exactly one circumference length.



Step 3: Use the same string to measure and mark the amount of the circumference that is cut off by the angle.



Step 4: Use the ruler on Mathomat to measure cut off arc and circumference lengths in millimetres.



Step 5: Calculate openness. String measurements: Cut off arc length = 24.5mm, circumference = 126mm

Openness

as a ratio

$\frac{24.5}{126}$ $\quad 24.5 \div 126 = 0.19.4 \quad 0.19.4 \times 100 = 19.4\%$

In degrees using cross multiplication: $\frac{24.5}{126} = \frac{x}{360}$

where x is degrees of angle cutting off (subtending) the arc.

$126x = 8820 \qquad x = 70°$

Use steps 1 - 5 to find the openness of the angle shown in the Plato's protractor I investigation in your Mathomat Explorer manual.