Arc Length from Degrees

Arc length is the distance along the curved edge of a circle. When the angle is given in degrees, arc length depends on how much of the full circle (360°) the arc represents.

Formula:
Arc Length = $(\theta / 360°) \times 2\pi r$

Where θ is the central angle in degrees and r is the radius.

Example: If $\theta = 90°$ and $r = 4$,
Arc Length = $(90 / 360) \times 2\pi(4) = (1/4) \times 8\pi = 2\pi$

Quiz

1. What is arc length?
2. What does the angle θ represent in the arc length formula?
3. Write the arc length formula using degrees.
4. Find the arc length when $\theta = 180°$ and $r = 5$.
5. True or False: Arc length measures a straight-line distance.

Answer Key

1. The distance along the curved edge of a circle.
2. The central angle that intercepts the arc.
3. Arc Length = $(\theta / 360°) \times 2\pi r$
4. Arc Length = $(180 / 360) \times 2\pi(5) = 5\pi$
5. False