 Name _____ Date _____ Per _____

GEOMETRY · CLASSWORK

Apply Arc Length

SCORE / 25

01 Part A · Practice

With radians, arc length is $s = r\theta$; with degrees, $s = \frac{\theta}{360} \cdot 2\pi r$.

EXAMPLE

A central angle of $\frac{2\pi}{3}$ radians is in a circle of radius 6 m. Find the arc length.

1. Angle is in radians, so use $s = r\theta$.
2. $s = 6 \cdot \frac{2\pi}{3} = 4\pi \approx 12.6$ m.

1 ●○○ An arc of length 16 cm is on a circle with radius 6 cm. Find the central angle in radians and in degrees (nearest tenth).

2 ●○○ A central angle of $\frac{3\pi}{2}$ radians intercepts an arc in a circle with radius 24 m. Find the arc length.

3 ●○○ A 280° arc has length $\frac{28\pi}{3}$ ft. Find the radius of the circle.

4 ●○○ Convert $\frac{7\pi}{5}$ radians to degrees.

5 ●○○ A 190° arc has length $\frac{437\pi}{18}$ ft. Find the radius of the circle.

6 ●○○ A central angle of $\frac{\pi}{12}$ radians intercepts an arc in a circle with radius 4 m. Find the arc length.

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Preview - the full worksheet and its answer key are at primeworksheet.com