

2021 Geometry Arc Length, Area of a Sector and Area of a Segment

Lesson 090 | Geometry | Arcs, sectors, and circular segments

<https://www.youtube.com/watch?v=QDsogQQZSLA>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

A circle has radius 7 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

02

A circle has radius 4 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

03

A circle has radius 5 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

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04

A circle has radius 6 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

05

A circle has radius 12 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

06

A circle has radius 13 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

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01

A circle has radius 7 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

$60^\circ = \pi/3$. Arc = $7\pi/3$. Sector = $49\pi/6$. Subtract the isosceles triangle area $r^2 \sin 60^\circ / 2 = 49\sqrt{3}/4$:
segment = $49\pi/6 - 49\sqrt{3}/4$.

02

A circle has radius 4 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

$60^\circ = \pi/3$. Arc = $4\pi/3$. Sector = $16\pi/6$. Subtract the isosceles triangle area $r^2 \sin 60^\circ / 2 = 16\sqrt{3}/4$:
segment = $16\pi/6 - 16\sqrt{3}/4$.

03

A circle has radius 5 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

$60^\circ = \pi/3$. Arc = $5\pi/3$. Sector = $25\pi/6$. Subtract the isosceles triangle area $r^2 \sin 60^\circ / 2 = 25\sqrt{3}/4$:
segment = $25\pi/6 - 25\sqrt{3}/4$.

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04

A circle has radius 6 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

$60^\circ = \pi/3$. Arc = $6\pi/3$. Sector = $36\pi/6$. Subtract the isosceles triangle area $r^2 \sin 60^\circ / 2 = 36\sqrt{3}/4$:
segment = $36\pi/6 - 36\sqrt{3}/4$.

05

A circle has radius 12 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

$60^\circ = \pi/3$. Arc = $12\pi/3$. Sector = $144\pi/6$. Subtract the isosceles triangle area $r^2 \sin 60^\circ / 2 = 144\sqrt{3}/4$:
segment = $144\pi/6 - 144\sqrt{3}/4$.

06

A circle has radius 13 and central angle 60° . Find arc length, sector area, and the minor circular segment area.

$60^\circ = \pi/3$. Arc = $13\pi/3$. Sector = $169\pi/6$. Subtract the isosceles triangle area $r^2 \sin 60^\circ / 2 = 169\sqrt{3}/4$:
segment = $169\pi/6 - 169\sqrt{3}/4$.