

The Secret of Central Angle, Intercepted Arc and Arc Length of a circle

Lesson 055 | Geometry | Arc length, sectors and angular speed • Circles, chords and equations

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

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

A circle has radius 10 cm and central angle $5\pi/11$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

02

Write the equation of a circle with center (2,13) and radius 2. Find its x-extremes and y-extremes.

03

A circle has radius 2 cm and central angle $4\pi/7$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

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04

Write the equation of a circle with center (3,11) and radius 3. Find its x-extremes and y-extremes.

05

A circle has radius 13 cm and central angle $3\pi/11$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

06

Write the equation of a circle with center (5,11) and radius 14. Find its x-extremes and y-extremes.

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01

A circle has radius 10 cm and central angle $5\pi/11$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

$$s=r\theta=50/11\pi \text{ cm. } A=(1/2)r^2\theta=250/11\pi \text{ cm}^2.$$

02

Write the equation of a circle with center (2,13) and radius 2. Find its x-extremes and y-extremes.

$$(x-(2))^2+(y-13)^2=4. \text{ Left/right: } (0,13), (4,13); \text{ bottom/top: } (2,11), (2,15).$$

03

A circle has radius 2 cm and central angle $4\pi/7$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

$$s=r\theta=8/7\pi \text{ cm. } A=(1/2)r^2\theta=8/7\pi \text{ cm}^2.$$

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04

Write the equation of a circle with center (3,11) and radius 3. Find its x-extremes and y-extremes.

$(x-3)^2 + (y-11)^2 = 9$. Left/right: (0,11), (6,11); bottom/top: (3,8), (3,14).

05

A circle has radius 13 cm and central angle $3\pi/11$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

$s = r\theta = 39/11\pi$ cm. $A = (1/2)r^2\theta = 507/22\pi$ cm².

06

Write the equation of a circle with center (5,11) and radius 14. Find its x-extremes and y-extremes.

$(x-5)^2 + (y-11)^2 = 196$. Left/right: (-9,11), (19,11); bottom/top: (5,-3), (5,25).