Theorems on Chords and Arcs

Talk to a Teacher
http://spoken-tutorial.org
National Mission on Education through ICT
http://sakshat.ac.in

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27 June 2012

Learning Objectives

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Verify theorems on

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- **Chords of circle**

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- **Arcs of circle**

Pre-requisites

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- **For relevant tutorials, please visit our website**
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System Requirement

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- **Ubuntu Linux OS Version 11.10**

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- **Geogebra Version 3.2.47.0**

Geogebra Tools used

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- **Circle with Center and Radius**

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- **Circle with Center and Radius**
- **Circular Sector with Center between Two Points**

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- **Circular Arc with Center between Two points**

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- **Circle with Center and Radius**
- **Circular Sector with Center between Two Points**
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- **Midpoint**

Geogebra Tools used

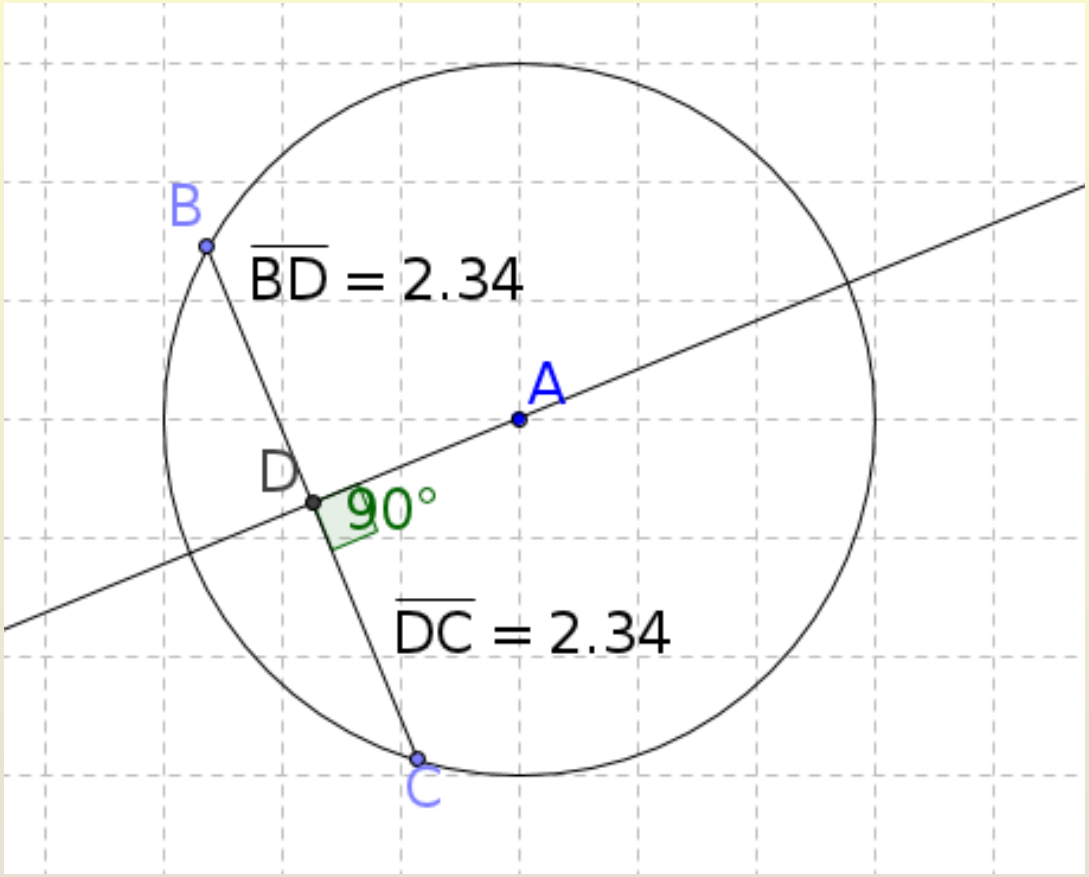
- **Circle with Center and Radius**
- **Circular Sector with Center between Two Points**
- **Circular Arc with Center between Two points**
- **Midpoint**
- **Perpendicular line**

Theorem

Theorem

Perpendicular from the centre of a circle to a chord bisects the chord

Perpendicular from centre A of a circle to chord BC bisects it

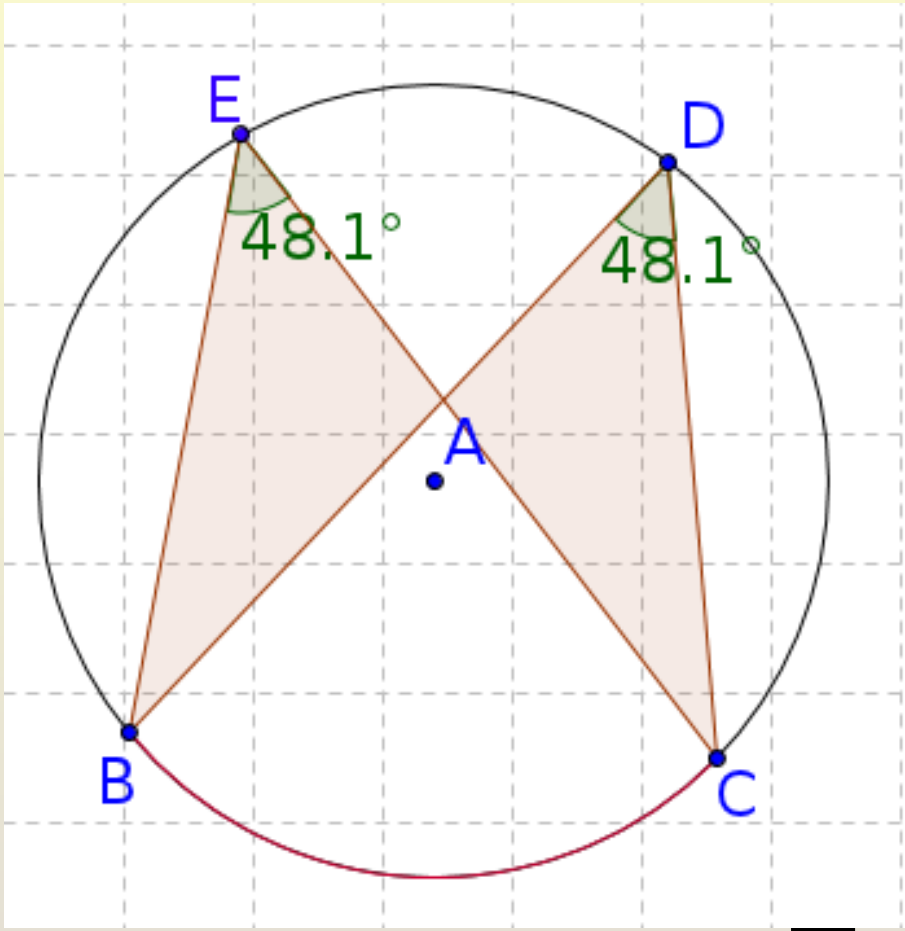


Theorem

Theorem

Inscribed angles subtended by the same arc are equal

Inscribed angles ∠BDC & ∠BEC subtended by the same arc BC are equal

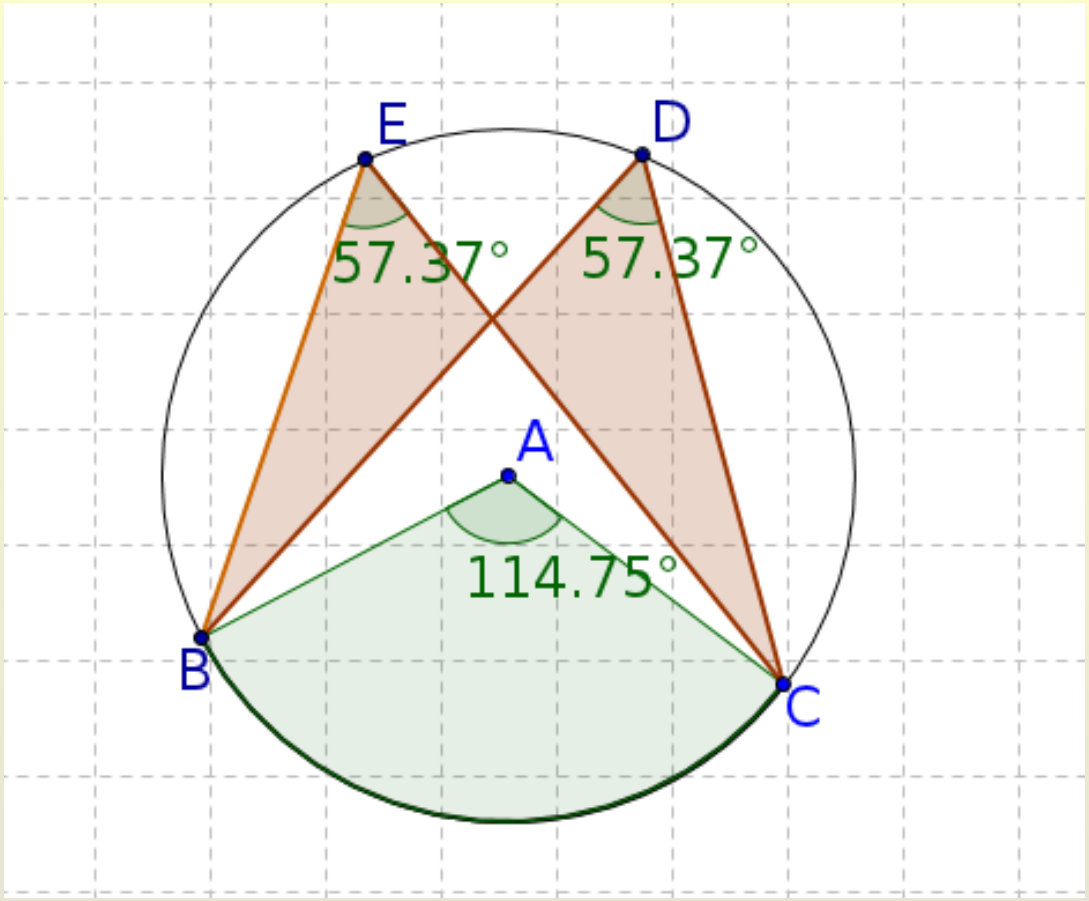


Theorem

Theorem

Angle subtended by an arc at the center, is twice the inscribed angles subtended by the same arc

∠BAC subtended by an arc BC at A, is twice the inscribed angles ∠BEC & ∠BDC subtended by the same arc



Summary

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To verify that

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- **Perpendicular from center, to a chord bisects it**

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- **Inscribed angles subtended by the same arc are equal**

Summary

To verify that

- **Perpendicular from center, to a chord bisects it**
- **Inscribed angles subtended by the same arc are equal**
- **The central angle of a circle is twice any inscribed angle subtended by the same arc**

Assignment

Assignment

Equal chords of a circle are equidistant from center

Assignment

1. **Draw a circle**
2. **Select Segment with Given Length from Point tool**
3. **Use it to draw two chords of equal size**
4. **Draw perpendicular lines from center to chords**
5. **Mark points of intersection**
6. **Measure perpendicular distances**

About the Spoken Tutorial Project

- Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- It summarises the Spoken Tutorial project
- If you do not have good bandwidth, you can download and watch it

Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- **Conducts workshops using spoken tutorials**
- **Gives certificates to those who pass an online test**
- **For more details, please write to contact@spoken-tutorial.org**

Acknowledgements

- Spoken Tutorial Project is a part of the Talk to a Teacher project
- It is supported by the National Mission on Education through ICT, MHRD, Government of India
- More information on this Mission is available at: http://spoken-tutorial.org /NMEICT-Intro