

Mensuration in Geogebra

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives



Learning Objectives

We will learn to find



Learning Objectives

We will learn to find

- ▶ **Area and perimeter of rhombus**



Learning Objectives

We will learn to find

- ▶ **Area and perimeter of rhombus**
- ▶ **Surface area of sphere and cone**



Learning Objectives

We will learn to find

- ▶ **Area and perimeter of rhombus**
- ▶ **Surface area of sphere and cone**
- ▶ **Volume of sphere and cone**



Pre-requisites



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- ▶ We assume that you have the basic working knowledge of Geogebra



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- ▶ **For relevant tutorials on Geogebra,**



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- ▶ Please visit our website
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System Requirement



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- ▶ **Ubuntu Linux OS Version 11.10**



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- ▶ **Ubuntu Linux OS Version 11.10**
- ▶ **Geogebra Version 3.2.47.0**



Geogebra tools used



Geogebra tools used

- ▶ Segment between two points



Geogebra tools used

- ▶ **Segment between two points**
- ▶ **Circle with center and radius**



Geogebra tools used

- ▶ **Segment between two points**
- ▶ **Circle with center and radius**
- ▶ **Ellipse**



Geogebra tools used

- ▶ **Segment between two points**
- ▶ **Circle with center and radius**
- ▶ **Ellipse**
- ▶ **Polygon**



Geogebra tools used

- ▶ **Segment between two points**
- ▶ **Circle with center and radius**
- ▶ **Ellipse**
- ▶ **Polygon**
- ▶ **New point**



Geogebra tools used

- ▶ **Segment between two points**
- ▶ **Circle with center and radius**
- ▶ **Ellipse**
- ▶ **Polygon**
- ▶ **New point**
- ▶ **Insert text**



Assignment 1



Assignment 1

Find area and perimeter of trapezium



Assignment 1

Find area and perimeter of trapezium

- ▶ Use output of file `cons-trapezium.ggb`



Assignment 1

Find area and perimeter of trapezium

- ▶ **Use output of file cons-trapezium.ggb**
- ▶ **Rename object 'g' as 'b'**



Assignment 1

Find area and perimeter of trapezium

- ▶ **Use output of file cons-trapezium.ggb**
- ▶ **Rename object 'g' as 'b'**
- ▶ **Area = (half sum of parallel sides) * (vertical height) = $(a+b)/2 * h$**



Assignment 1

Find area and perimeter of trapezium

- ▶ **Use output of file cons-trapezium.ggb**
- ▶ **Rename object 'g' as 'b'**
- ▶ **Area = (half sum of parallel sides) * (vertical height) = $(a+b)/2 * h$**
- ▶ **Perimeter = (sum of the sides) = $(a+b+c+d)$**



Summary



Summary

We learnt to find



Summary

We learnt to find

- ▶ **Area and perimeter of rhombus**



Summary

We learnt to find

- ▶ **Area and perimeter of rhombus**
- ▶ **Surface area of sphere and cone**



Summary

We learnt to find

- ▶ **Area and perimeter of rhombus**
- ▶ **Surface area of sphere and cone**
- ▶ **Volume of sphere and cone**



Summary

We also learnt to draw



Summary

We also learnt to draw

- ▶ **Sphere**



Summary

We also learnt to draw

- ▶ **Sphere**
- ▶ **Cone**



Assignment 2



Assignment 2

Surface area and volume of cylinder



Assignment 2

Surface area and volume of cylinder

- ▶ Draw 2 ellipses of same size one below the other



Assignment 2

Surface area and volume of cylinder

- ▶ Draw 2 ellipses of same size one below the other
- ▶ Connect edges of ellipses



Assignment 2

Surface area and volume of cylinder

- ▶ Draw 2 ellipses of same size one below the other
- ▶ Connect edges of ellipses
- ▶ Use center tool, find center of one ellipse



Assignment 2

Surface area and volume of cylinder

- ▶ Draw 2 ellipses of same size one below the other
- ▶ Connect edges of ellipses
- ▶ Use center tool, find center of one ellipse
- ▶ Join center and edge



Assignment 2

- ▶ Rename object 'b' as 'h' and 'e' as 'r'



Assignment 2

- ▶ Rename object 'b' as 'h' and 'e' as 'r'
- ▶ Surface area = $2\pi r(r + h)$



Assignment 2

- ▶ **Rename object 'b' as 'h' and 'e' as 'r'**
- ▶ **Surface area = $2\pi r(r + h)$**
- ▶ **Volume = $\pi r^2 h$**



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>

