

3D Geometry

Spoken Tutorial Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives



Learning Objectives

Use GeoGebra to view,



Learning Objectives

Use GeoGebra to view,

- **And construct different structures in 3D space**



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Use GeoGebra to view,

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- Solids of rotation of polynomial functions



Learning Objectives

Use GeoGebra to view,

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- Solids of rotation of polynomial functions
- Trigonometric functions in 3D space



System Requirement



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- **Ubuntu Linux OS v 16.04**



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- **GeoGebra 5.0.481.0-d**



Pre-requisites



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- **GeoGebra interface**



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- **Geometry**



Pre-requisites

- **GeoGebra interface**
- **Geometry**
- **For relevant tutorials, please visit our website**

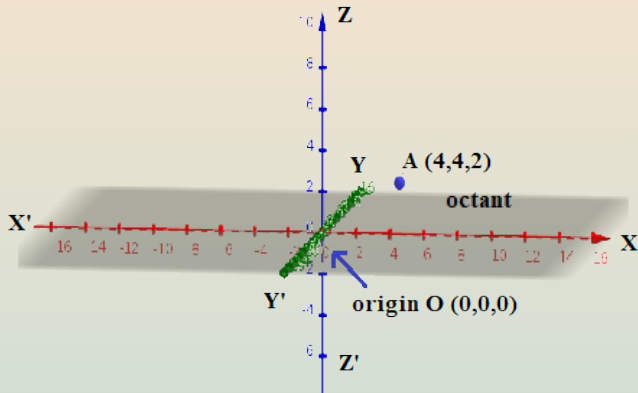
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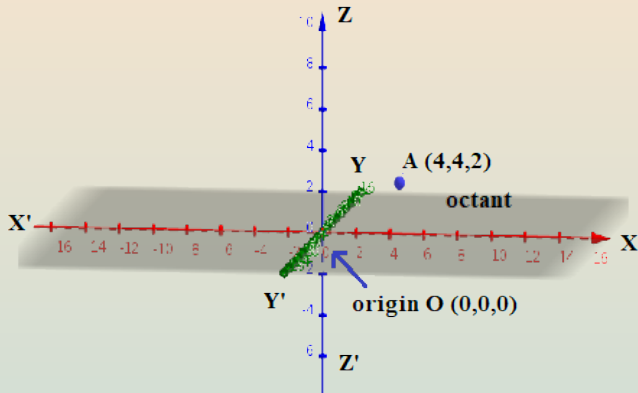
Rectangular Co-ordinate System



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Rotation of a polynomial



Rotation of a polynomial

- Let us rotate $f(x) = -2x^4 - x^3 + 3x^2$



Rotation of a polynomial

- Let us rotate $f(x) = -2x^4 - x^3 + 3x^2$
- Part in second quadrant (XY plane),
about x axis



Summary

Use GeoGebra to view,

- **And construct different structures in 3D space**
- **Solids of rotation of polynomial functions**
- **Trigonometric functions in 3D space**



Assignment



Assignment

- Construct a prism and a cylinder



Assignment

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- Draw lines to pierce the structures and find their intersection points



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- Draw lines to pierce the structures and find their intersection points
- Graph the polynomial,
$$f(x) = x^5 - 7x^4 + 9x^3 + 23x^2 - 50x + 24$$



Assignment

- Construct a prism and a cylinder
- Draw lines to pierce the structures and find their intersection points
- Graph the polynomial,
$$f(x) = x^5 - 7x^4 + 9x^3 + 23x^2 - 50x + 24$$
- Show the solid formed due to rotation of peak in first quadrant in XY plane



Assignment



Assignment

- You fly a kite off a cliff; the kite got dumped into the lake below



Assignment

- You fly a kite off a cliff; the kite got dumped into the lake below
- You gave out 325 feet of string



Assignment

- You fly a kite off a cliff; the kite got dumped into the lake below
- You gave out 325 feet of string
- The angle of declination from the cliff's edge to the kite is 15 degrees



Assignment

- You fly a kite off a cliff; the kite got dumped into the lake below
- You gave out 325 feet of string
- The angle of declination from the cliff's edge to the kite is 15 degrees
- How high is the cliff?



About the Spoken Tutorial Project

- Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- It summarizes 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



Forum for specific questions

- Do you have questions in **THIS Spoken Tutorial?**
- Please visit <http://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- Someone from our team will answer



Acknowledgements

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- 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>

