

Forces

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives



Learning Objectives

- Find the resultant of forces using addition of vectors



Learning Objectives

- Find the resultant of forces using addition of vectors
- Achieve an equilibrium condition using parallelogram of forces



System Requirements



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- **Ubuntu Linux OS v 16.04**



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- **Firefox Web Browser v 62.0.3**



Pre-requisites



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- Learner should be familiar with **Apps on Physics**



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- Learner should be familiar with **Apps on Physics**
- For the pre-requisite tutorials please visit this site
<https://spoken-tutorial.org>



Link for Apps on Physics



Link for Apps on Physics

<https://www.walter-fendt.de/html5/phen/>



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Apps on Physics



Apps on Physics

- **Resultant of Forces**



Apps on Physics

- **Resultant of Forces**
- **Equilibrium of Three Forces**

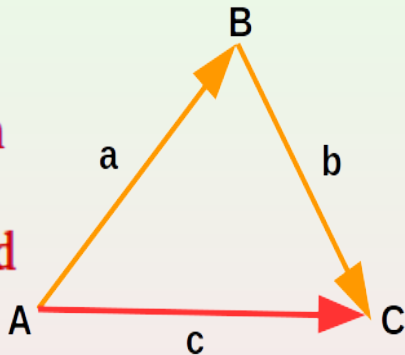


Triangle Law of Vector Addition



Triangle Law of Vector Addition

When two vectors are represented by two sides of a triangle with same magnitude and direction then the third side represents the resultant of vectors



Assignment



Assignment

- Change the number of forces to 3 & 4



Assignment

- Change the number of forces to 3 & 4
- In each case, change the magnitude and direction



Assignment

- Change the number of forces to 3 & 4
- In each case, change the magnitude and direction
- Observe the resultant vectors and explain your observation



Equilibrium of Forces



Equilibrium of Forces

- When all the forces acting on an object are balanced, then the object is said to be in a state of equilibrium

Rightward force = Leftward force

Upward force = Downward force



Assignment



Assignment

- Try different combinations of forces to check the angles and equilibrium conditions



Assignment

- Try different combinations of forces to check the angles and equilibrium conditions
- Give an explanation



Summary

- Found the resultant of forces using addition of vectors
- Achieved an equilibrium condition using parallelogram of forces



Acknowledgement

- **These Apps were created by Walter-fendt and his team**



About the Spoken Tutorial Project

- Watch the video available at https://spoken-tutorial.org/What_is_a_Spoken_Tutorial
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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

- Questions in THIS Spoken Tutorial?
- Visit <https://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- The Spoken Tutorial project will ensure an answer

You will have to register to ask questions



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