

Newton's Laws of Motion

Level 3 Structure

Level 3 Physics Formula Sheet

Free Body Force Diagrams

- A **Free Body Diagram** is a type of vector diagram that shows all the Forces acting on an object. The forces will show the size and direction of each force.
- **Free Body Diagrams** are used to determine the **Net Force** (Net Force or Resultant Force is the sum of all the forces).

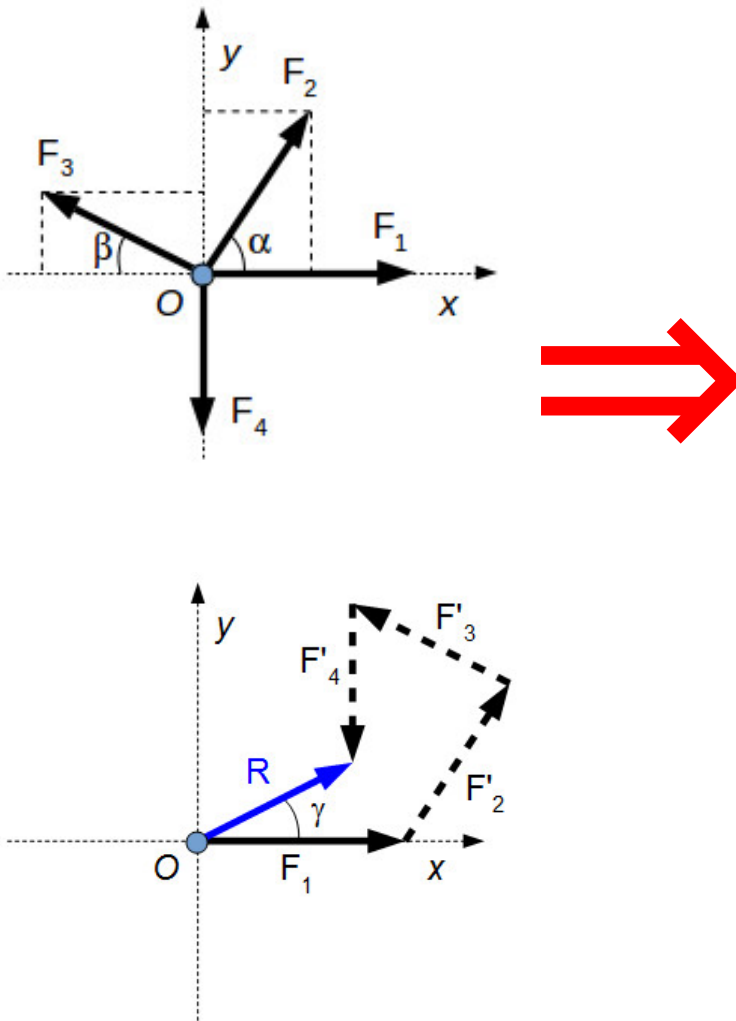
Adding Force vectors head to tail to find the Net Force (Resultant Force) **R**

2D

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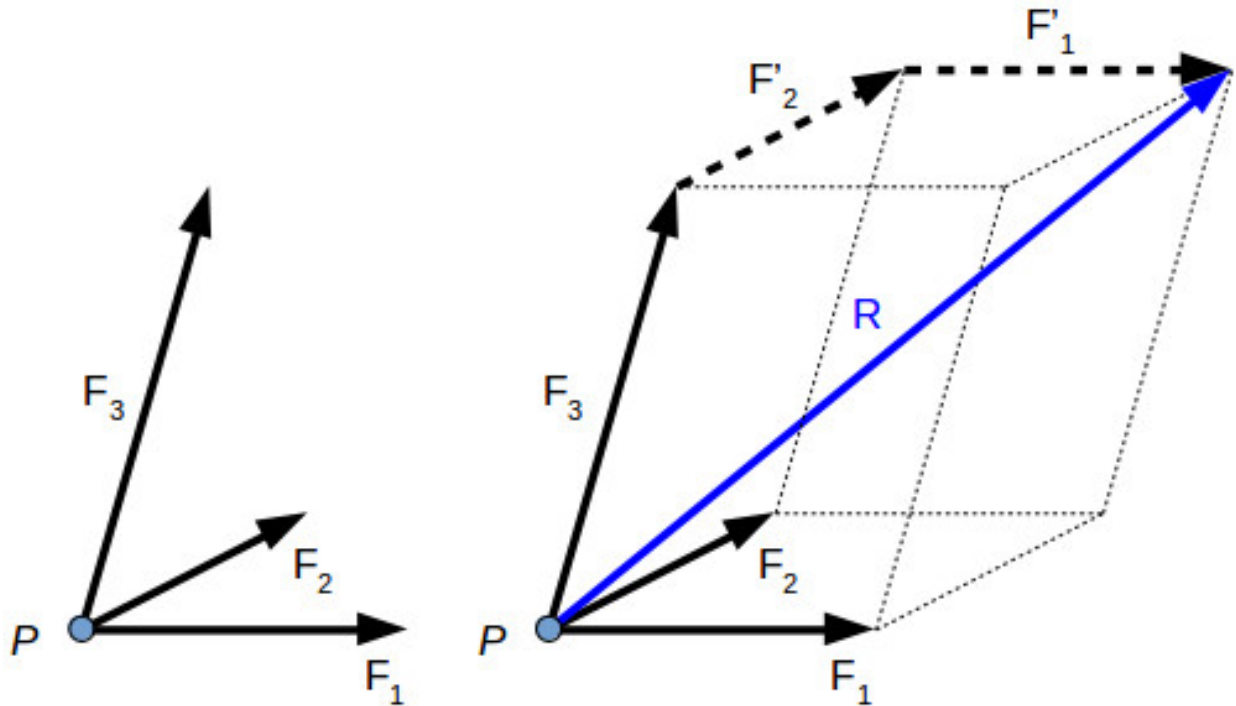


3D

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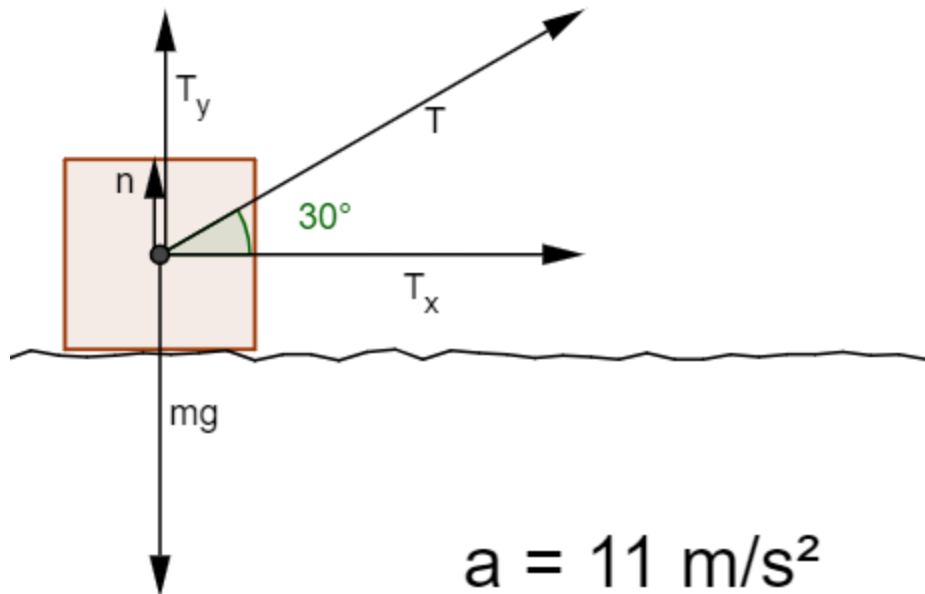
Interactive Examples using Free Force Body Diagrams

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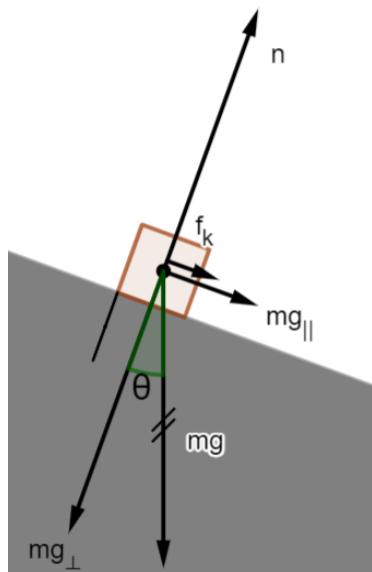
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Friction: Pulling a Box On a Horizontal Surface



Static and Kinetic Friction on an Inclined Plane

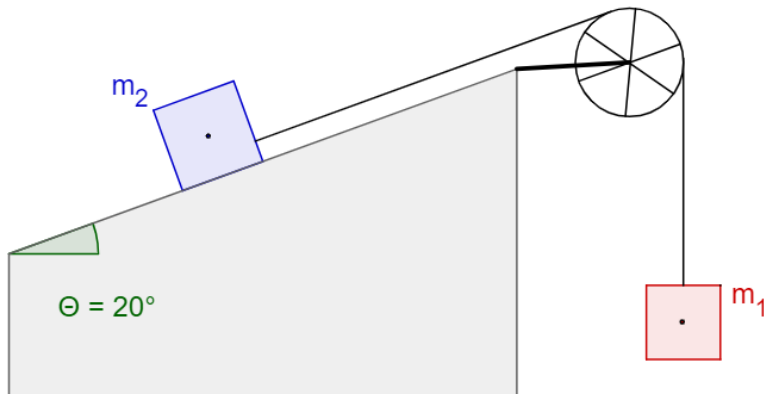


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Atwood's Machine & Inclined Plane with Friction



The Conical Pendulum

