

# Physics 231 - 20-Sep-99



- Newton's 2<sup>nd</sup> Law -  $F = ma$
- Newton's 3<sup>rd</sup> Law
- Examples
  - Weight
  - Sliding - with and without friction
  - Inclined Plane
- quiz

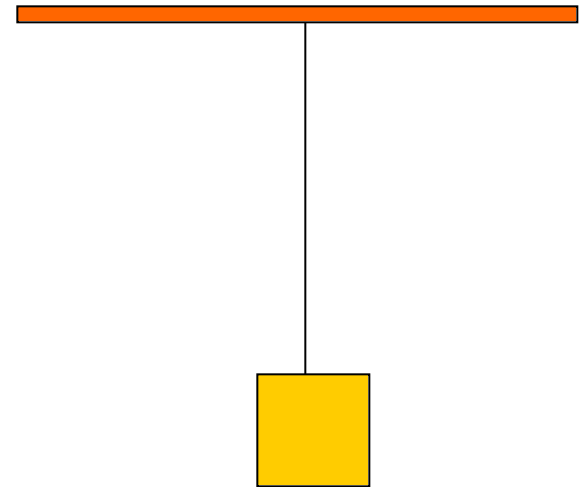
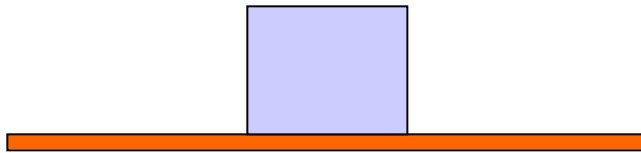
# Newton's 2<sup>nd</sup> Law



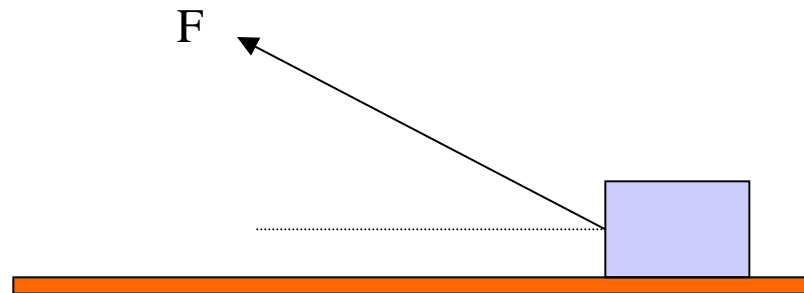
# Newton's 3<sup>rd</sup> Law



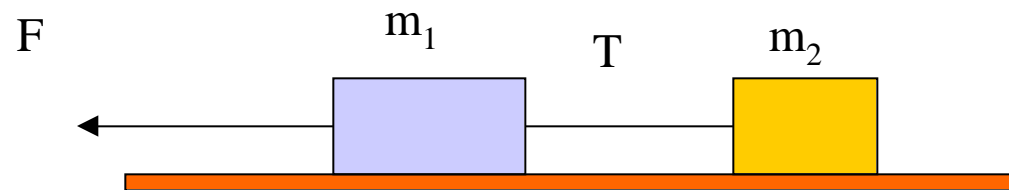
Weight -  $W = mg$



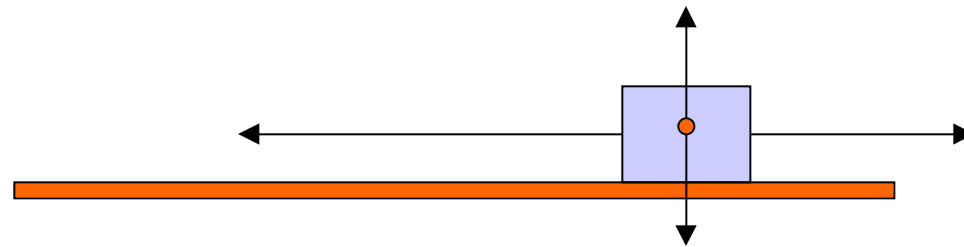
# Sliding - No Friction



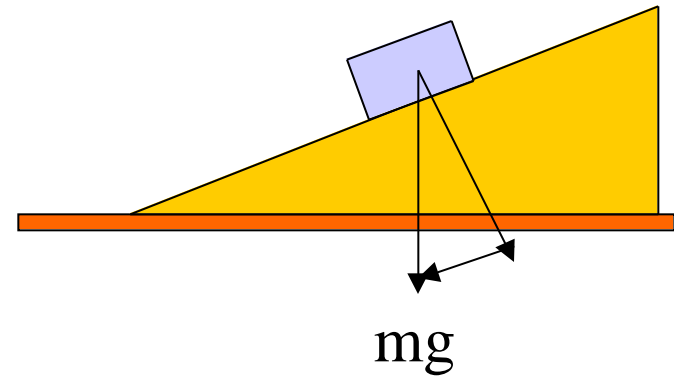
# Sliding - Coupled Objects



# Sliding - Friction



# Inclined Plane



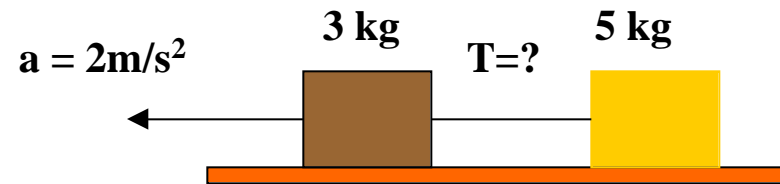


Q1 - Answer = c

Q2 - Problem A - Last name A-K

Two masses, 3 kg and 5 kg, connected by a rope, are accelerated on a frictionless surface by a rope attached to one of them. If their acceleration is  $2 \text{ m/s}^2$  what is the tension in the rope connecting them?

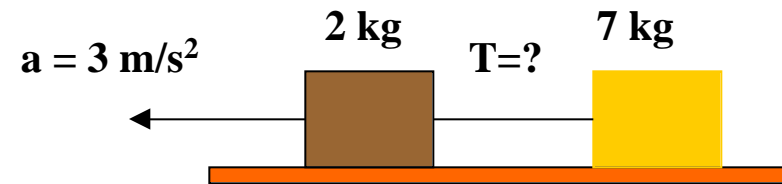
- a. 2 N
- b. 3 N
- c. 6 N
- d. 10 N
- e. 16 N



Q1 - Answer = c

Q2 - Problem B - Last Name L-Z

Two masses, 2 kg and 7 kg, connected by a rope, are accelerated on a frictionless surface by a rope attached to one of them. If their acceleration is 3 m/s what is the tension in the rope connecting them?



- a. 21 N
- b. 6 N
- c. 27 N
- d. 7 N
- e. 15 N