



Newton's Third Law of Motion

Law of Action and Reaction

Welcome to class!

Today's Agenda

- Force interactions & Newton's 3rd Law
- Systems

Forces and Interactions

- inter = between

1

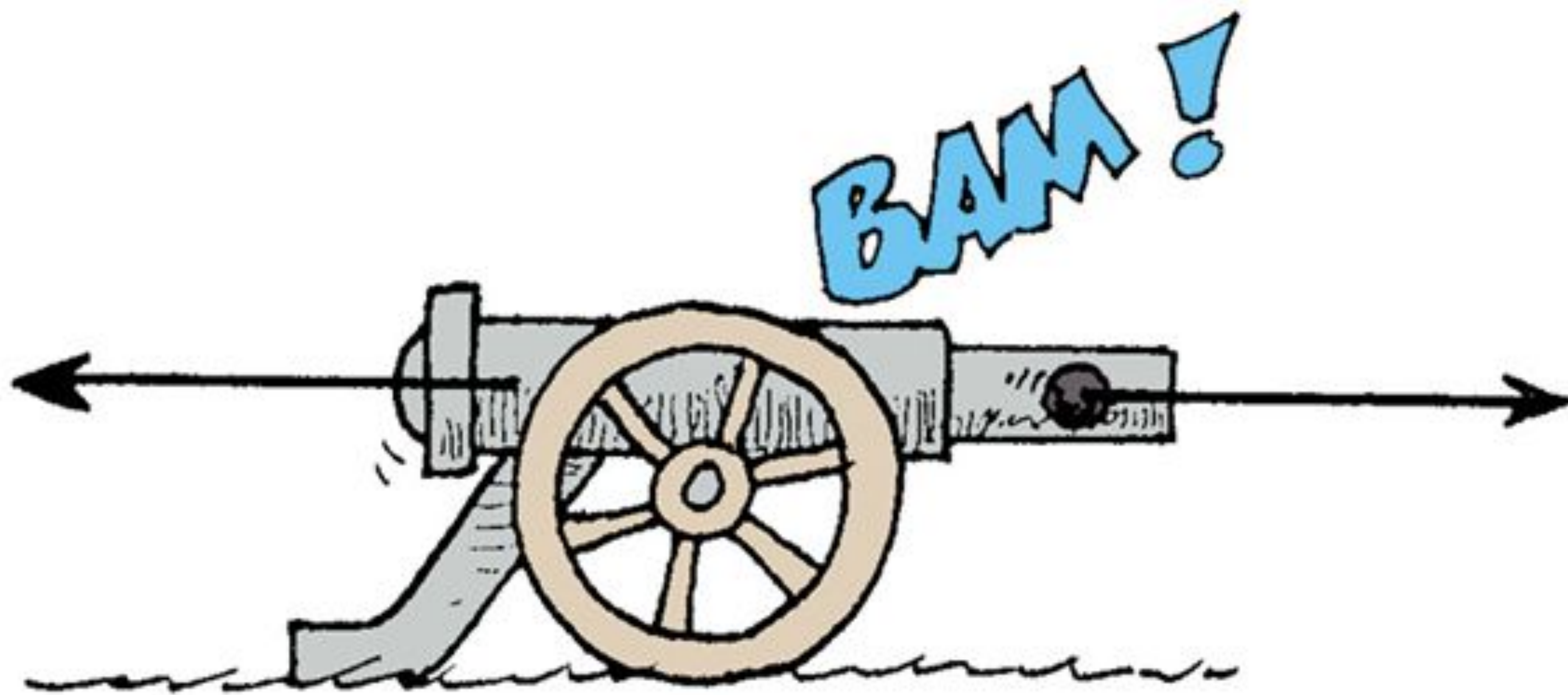
- all forces are interactions between masses

- each mass feels same size force

Newton's 3rd Law of Motion

Whenever one object exerts a force on a second object, the second object exerts an equal and oppositely directed force on the first.

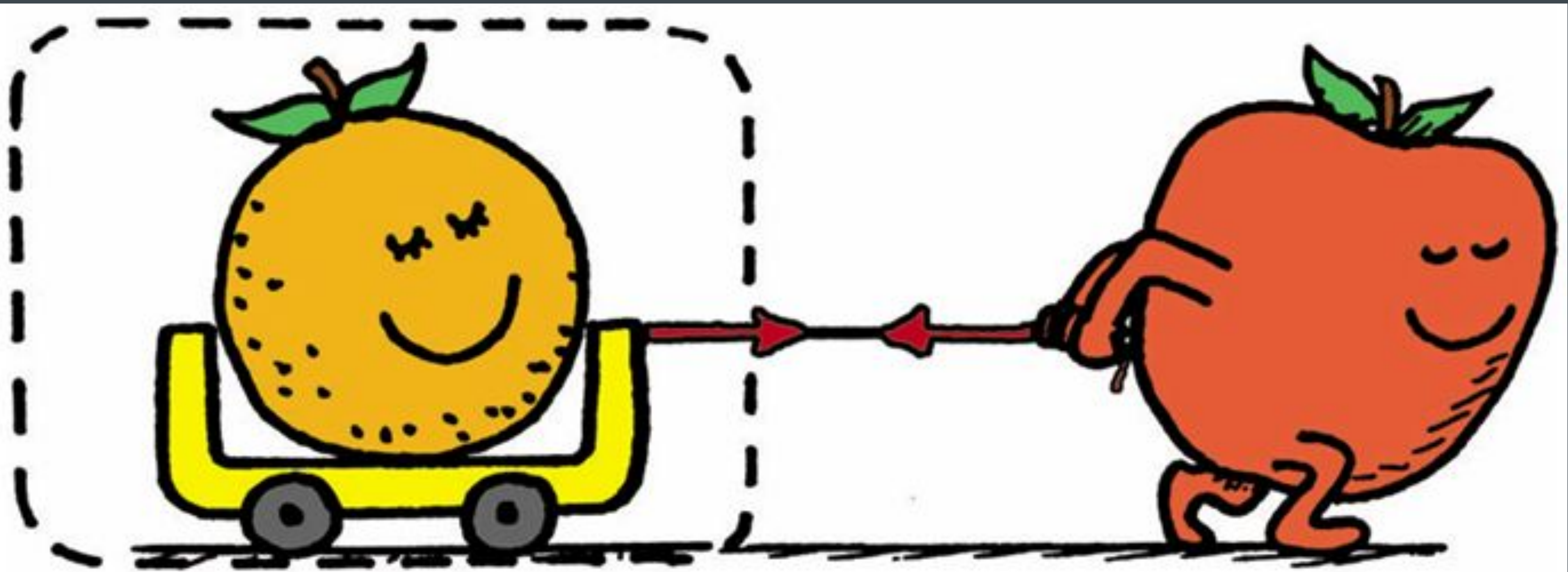




Systems

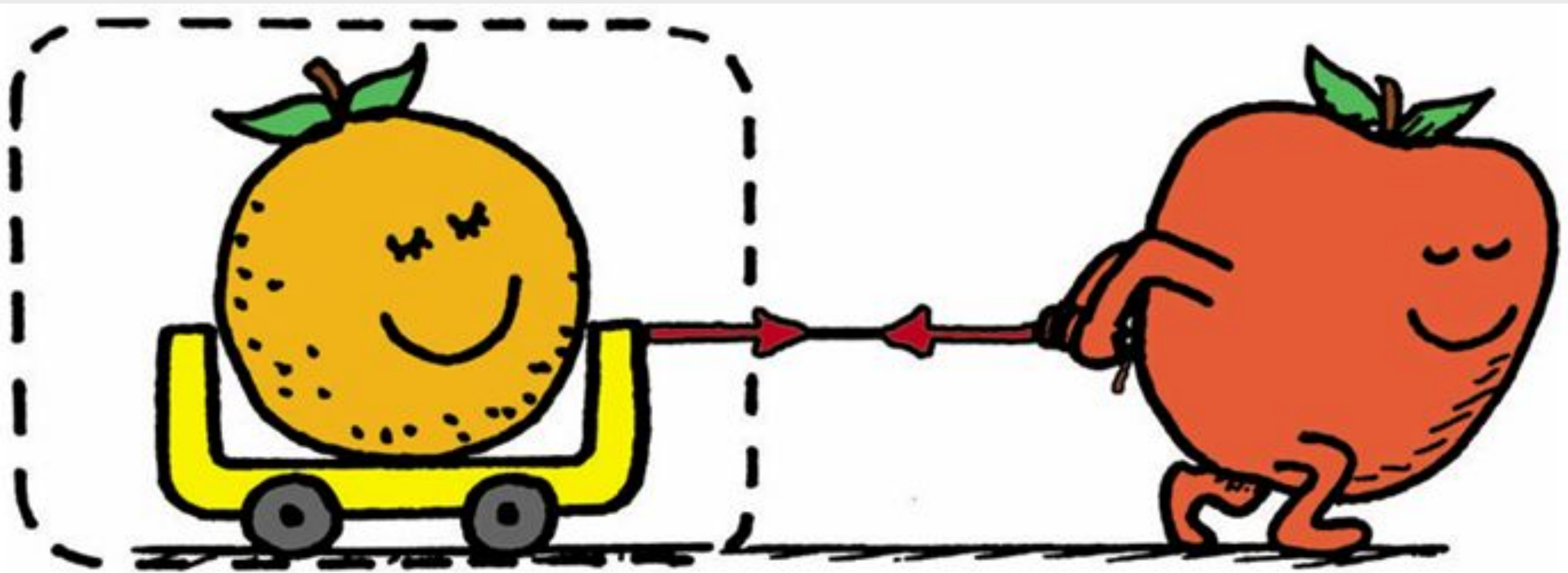


- (net-external force on a system) = (mass of system) \times (acceleration of system).
- often defined so unknown forces can be determined, e.g., tension can be determined below.



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What external forces act
on this system? Can the
system move?

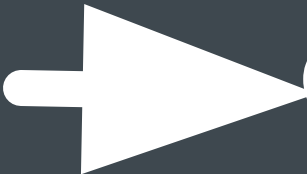


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What forces act on the
man?



Summary of Newton's Laws

1st: $F_{\text{net}} = 0$  constant velocity

2nd: $F_{\text{net}} = ma$

3rd: Forces occur in pairs (equal size,
opposite direction)

Thank you :)

Reference

(2021). Retrieved 16 August 2021, from
<https://www.austincc.edu/bechtold/1405/PowerPoint/05.ppt>