Lecture 5

Newton's third law ILD

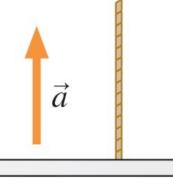
Please take one green and one white sheet

Apparent weight

Consider a man standing on a spring scale.

The only forces acting on the man are the weight force and the force of the spring.





Now imagine he weighs himself in a lift which is accelerating upwards.

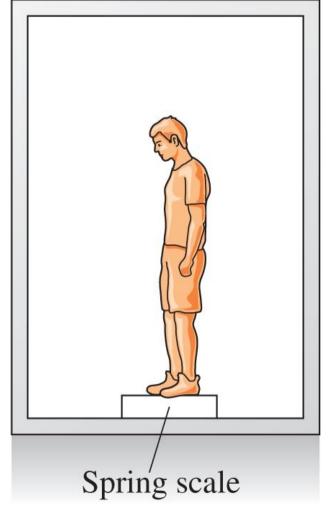
Since he is accelerating, there must be a net force

$$F_{\text{net}} = F_{\text{sp}} - W = ma_y$$
 or

$$F_{\rm sp} = W + ma_{\rm y}$$

i.e. the scale reads heavier.

Apparent weight is given by the magnitude of the normal force.



NEXT LECTURE

Circular motion

Read: KJF §6.1, 6.2