Acceleration

- Acceleration: $$a = \frac{\text{change in velocit y}}{\text{change in time}} = \frac{\Delta v}{\Delta t}$$

Standard units of acceleration : m/s^2

- If there were no air resistance, all objects in Earth gravity would fall with the same acceleration,

g=9.81 m/s^2 (directed downward)

Galileo Galilei's experiment in Pisa (possibly, a legend)

Homework

Problem 1. A ball is thrown vertically upwards with initial speed v_0=30m/s. Gravitational acceleration is g =10 m/s^2, and is directed downward. What will be the velocity of the ball after time t=4s?

Problem 2.

The largest passenger airplane, Airbus A380, has acceleration a=2 m/s^2 during its take-off. How much time it needs to reach the take off speed v= 280 km/hr?