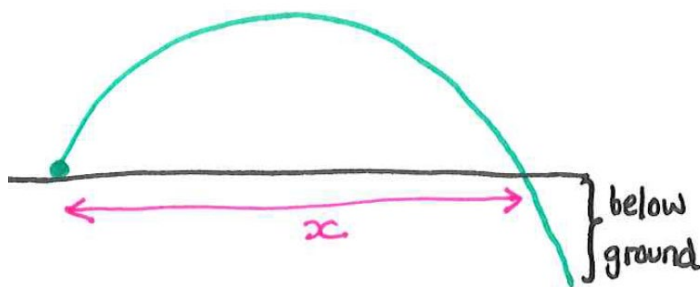


Modelling

You need to think how the maths applies to the context of the problem.

$$h = 2 + 11t - 0.3t^2$$



Equation only valid if
in the range of x .

Use common sense!

Definitions

Particle - Dimensions are negligible.
mass acts at single p

Rod - Thickness is negligible.
mass acts at single point

Inextensible String - string does not stretch

Light Object - mass is negligible (compare to other objects)

Uniform Body - mass is distributed evenly.
mass acts at the centre.

Assumptions

Make life easier for yourself!

- Ignore air resistance.
- Ignore rotational motion.
- No friction.
- Mass acts at a single point.
- Object has no dimensions.

Units

Always check the units in the question are as follows.

In not them convert.

mass	kg
Length	metres
Time	seconds
Speed	ms^{-1}
Velocity	ms^{-1}
Acceleration	ms^{-2}
Force	Newtons
Weight	Newtons

$$6 \text{ km h}^{-1} = 6 \frac{\text{km}}{\text{h}} = 6 \frac{1000}{3600} = \frac{5}{3} \text{ ms}^{-1}$$

Vectors

i components

right and left

j components

up and down

Velocity and Vectors

Velocity

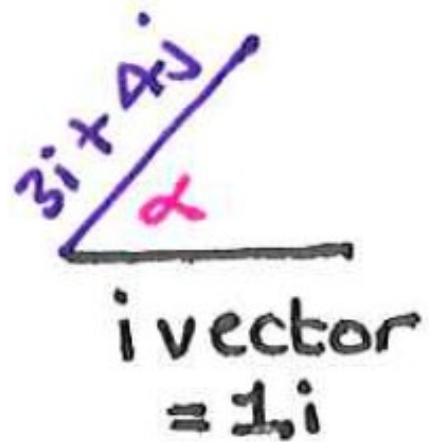
$$3i + 4j \text{ ms}^{-1}$$

Speed

$$\sqrt{3^2 + 4^2} = 5 \text{ ms}^{-1}$$

Unit Vectors

i unit vectors = $1i$



j unit vectors = $1j$

