Corbettmaths

$s = ut + \frac{1}{2}at^2$

Mechanics

Video Tutorial

s - displacement (m)
u - initial velocity (m/s)
t - time (seconds)
a - acceleration (m/s^2)

An airplane is taking off along a straight runway.
The airplane starts from rest and accelerates at $3m/s^2$
After 30 seconds, the airplane takes off.
How far did the airplane travel during the 30 seconds?

A particle is travelling along a straight line with constant acceleration.
The particle passes the point A with a speed of 10m/s.
After 8 seconds, the particle passes the point B. The distance AB = 128m
Find the acceleration.

A car accelerates down a straight road at $4m/s^2$
There are two road signs on the road, 280m apart.
A car passes the first road sign at 8m/s.
How long until the car passes the second road sign?