Solving problems

Many examination problems involve using the equations of uniformly accelerated motion. For example, if a car travelling at an initial speed of 10 m/s accelerates at 2.0 m/s² for 5.0 s, what is its final speed and how far did it travel while accelerating?

The method for solving this type of problem is to first write down what you know:

u = 10 m/s

a = 2.0 m/s²

t = 5.0 s

Then write down the quantities you are asked to find:

v = ?

s = ?

Finally, choose the equations that relate the unknown quantities to the known ones, and substitute the values.

Choose the equation: v = u + at

Substituting the values, we find that:

v = 10 + 2.0 x 5.0

= 20 m/s

Then choose the equation: s = ut + ½at²

Substituting the values, we find that:

s = 10 x 5.0 + ½ x 2.0 x 5.2

= 75 m