Applied Maths Question One

Accelerated Linear Motion

① Constant uniform acceleration.

Problems of this kind involve one particle (car, ball, person) moving from point a to point b with a constant acceleration or deceleration. They involve the following quantities:

u	(ms^{-1})	initial velocity (vector properties: speed in a given direction)
v	(ms^{-1})	final velocity
a	(ms^{-2})	acceleration (change in velocity over time : vector + faster - slower)
t	(s)	time
s	(m)	distance or displacement

They use the following formulae:

$$v = u + at$$

$$s = \left(\frac{u+v}{2}\right)t$$

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

$$v^2 = u^2 + 2as$$

Answering questions:

list: u, v, a, t, s → assign given values → choose your formula: only one unknown → rearrange → sub → solve!

Q.E.D.