Acceleration

Unit for acceleration is m/s^2 = m/s/s   ie: 8 m/s^2.
This REALLY means that every second, I increase my speed by 8 m/s.

ie:	0 m/s →	8 m/s →	16 m/s →	24 m/s ……
	0 s	1 s	2 s	3 s ……

If I try to pass someone in my car, my acceleration might be 5 km/h/s.
This REALLY means that every second, I increase my speed by 5 km/h.

ie:	70 km/h →	75 km/h →	80 km/h →	85 km/h ……
	0 s	1 s	2 s	3 s ……

Acceleration = rate of change of velocity over time (…or in everyday language…how quickly is my speed changing?).

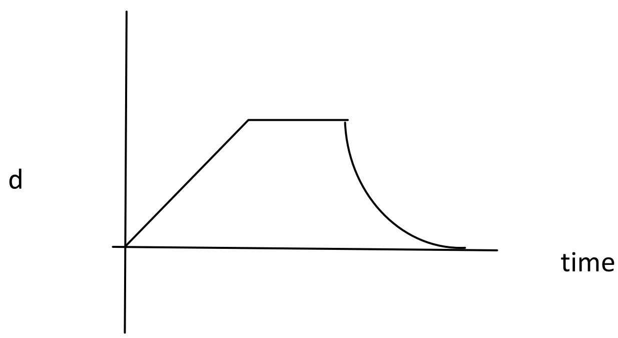
Graphical Analysis. See next page.

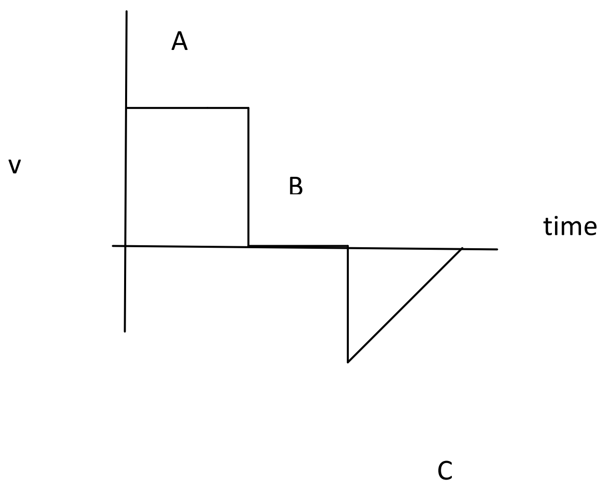
** We started by looking at just the velocity-time graph. Try doing this and ignoring the other two. Make sure you understand what the v/t graph is telling you. Then….decide how that looks on the acceleration graph.

ie: When a velocity is constant (not changing), then the acceleration is zero! (Part A & B)

Also: in Part C, the velocity is changing, so there is acceleration. Acceleration is the 'rate of change' over time. This is the slope! (Δy or displacement / Δx or time). The slope is +ve in Part C, so there is positive acceleration.

These graphs are stacked so that the ‘x’ axis or time lines up.





Part A – constant velocity in +ve direction

Part B – constant zero velocity – stopped

Part C – Fast negative velocity slowing down to a stop. (acceleration)