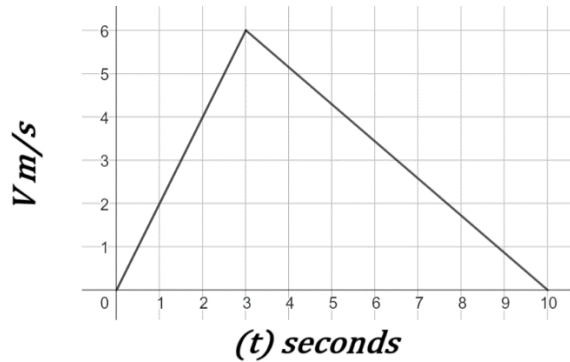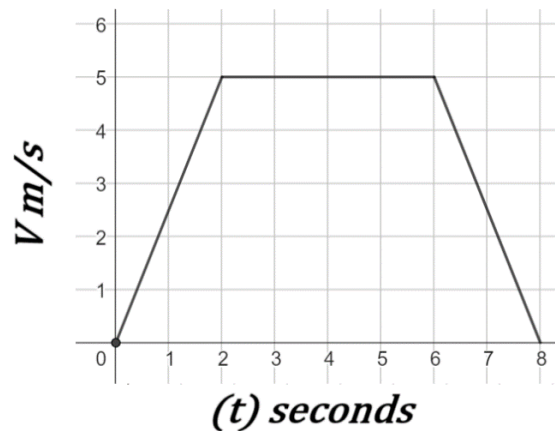## Velocity Time Graphs – www.m4ths.com

**(1)** The velocity time graphs below shows the movement of a particle.

(t) seconds

(a) Show that the acceleration for the first section is $2m/s$

(b) Find the deceleration for the second section

(c) Find the total distance travelled for the 10 seconds.

(2) Study the velocity/time graph below.

(t) seconds

(a) Find the acceleration for each section.

(b) Find the total distance travelled.

(3) Study the v/t graph below for a car.

(t) seconds
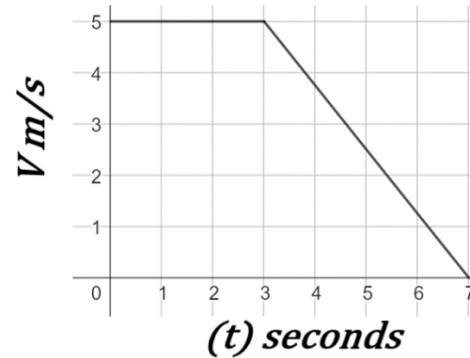
(a) State the initial velocity of the car.

(b) Find the distance travelled by the car for the journey.
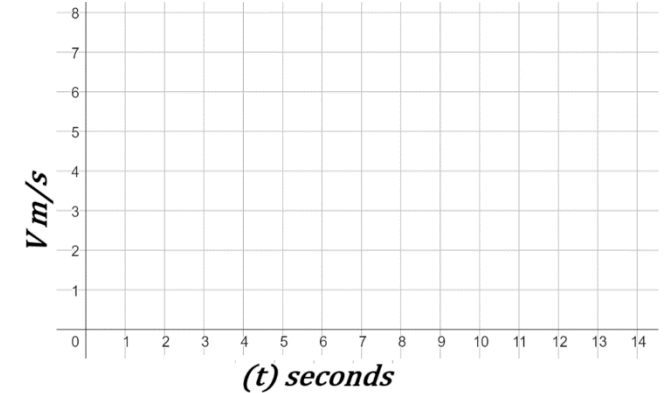
(c) Find the acceleration of each section of the journey.

(4) The diagram below shows part of a v/t graph for a plastic sword.
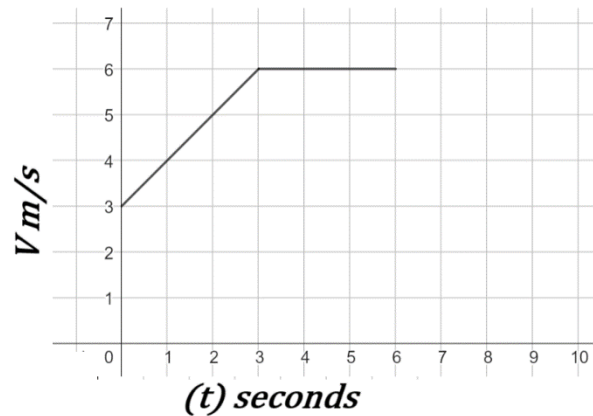
(t) seconds

(a) State the initial velocity of the sword.

(b) The sword starts decelerating uniformly to rest after 6 seconds and comes to rest after 10 seconds. Complete the graph.
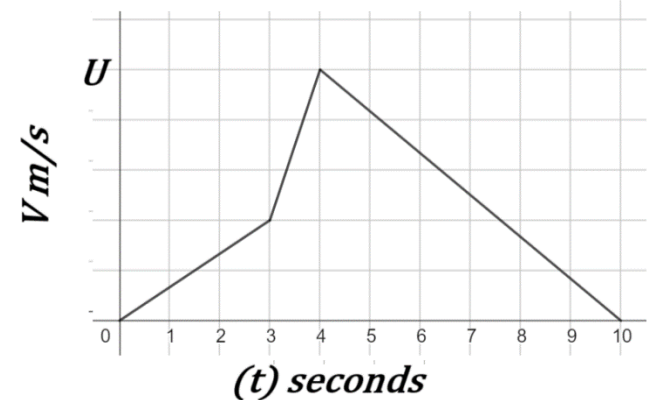
(c) Show that the total distance travelled is $43.5m$

(5) Fred starts running from rest and reaches a speed of $4m/s$ after 2 seconds. He then speeds up uniformly to $6m/s$ in a further 2 seconds. He then maintains this speed for 3 seconds before coming to rest in a further 4 seconds.

(a) Draw the v/t graph on the axes below.

(t) seconds

(b) Find his acceleration for each section.

(c) Find the total distance travelled.

(6) The diagram below shows a v/t graphs.

(t) seconds

Given that the total distances travelled is $43m$

(a) Show, using the graph scale, that $U = 10$.

(b) Find the acceleration for each section.