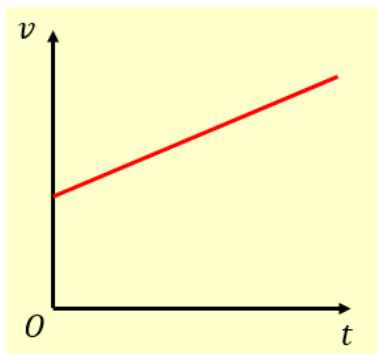
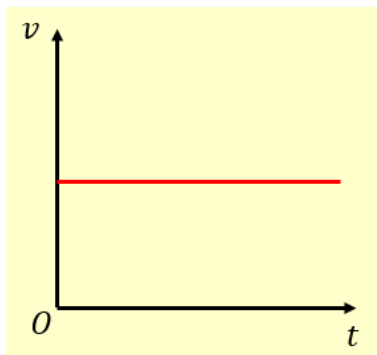
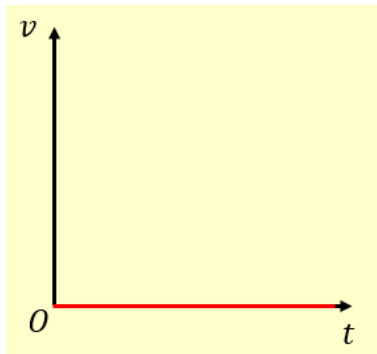
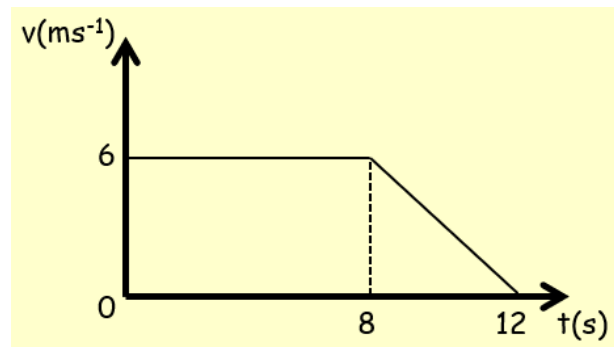


9B Time-Speed Graphs



1. The diagram below shows a velocity-time graph for the motion of a cyclist moving along a straight road for 12 seconds. For the first 8 seconds, she moves at a constant speed of 6ms^{-1} . She then decelerates at a constant rate, stopping after a further 4 seconds. Find:



- a) The distance travelled by the cyclist
- b) The rate of deceleration of the cyclist

2. A particle moves along a straight line. It accelerates uniformly from rest to a speed of 8ms^{-1} in T seconds. The particle then travels at a constant speed for $5T$ seconds. It then decelerates to rest uniformly over the next 40 seconds.

a) Sketch a velocity-time graph for this motion

b) Given that the particle travels 600m, find the value of T