**9A Time-Distance Graphs**







1. A cyclist rides in a straight line for 20 minutes. She waits for half an hour, then returns in a straight line to her starting point in 15 minutes. Below is a displacement-time graph for her journey.



1. Work out the average velocity for each stage of her journey, in kmh-1
2. Write down the average velocity for the whole journey
3. Work out the average speed for the whole journey

**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:



1. The distance travelled by the cyclist
2. The rate of deceleration of the cyclist
3. 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.
4. Sketch a velocity-time graph for this motion
5. Given that the particle travels 600m, find the value of T