1. A car with an initial velocity of 15m/s drives up a hill of 120m. The acceleration is -0.6m/s^2. How long does it take for the car to reach the top?
2. A car slows down at a constant acceleration by pressing on its brake until it stops. Given that the average velocity for the first half journey is v, what is the average velocity for the second half journey?
3. A train moves forward at a velocity of The driver suddenly realizes that at a distance of s, there is another train moving at the same direction with an velocity of To prevent any accident occurring, the driver immediately let the train slows down at a constant acceleration of What value should be if the two trains do not collide?
4. A car departs from a place and moves with a constant acceleration of When the velocity reaches , the car moves at the constant velocity for a period. Then, the car decelerates at a constant value of for another time period unit it stops. Given that the total distance travelled is S. What is the total amount of time the car travels?
5. A car moves in a straight line with a constant acceleration and passes pints A, B, C. Given that AB = BC = s, and it taks a time of to pass AB, and a time of to pass BC. What is the acceleration for the car?
6. Two car depart on a highway at the same time in the same direction. The initial velocity for car A is 10m/s, and car A presses its brake to decelerate until it stops. The acceleration has a magnitude of 4m/s^2. The initial velocity for car B is 0m/s, and accelerates with a value of 1m/s^2. How long does it take for car B to pass car B.