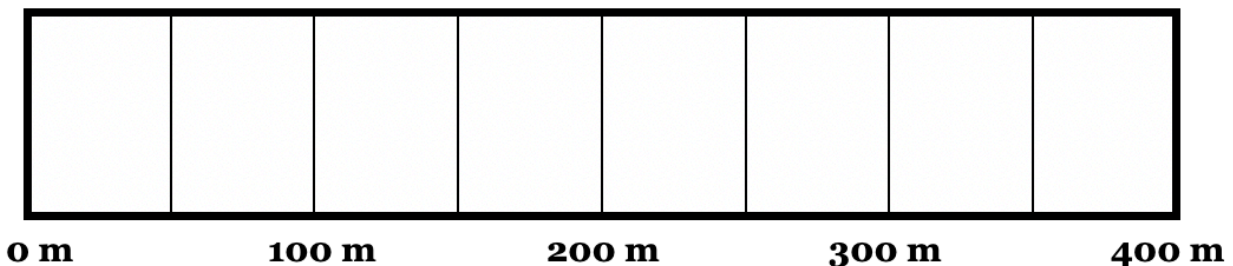


Two Stages of Motion Problem Level 1

The key to understanding this problem is to realize that your car will do two distinct types of motion while traveling the length of the race course. For the first part, the car will be following the equations of constant acceleration. For this part you will be finding the distance it travels while accelerating and the final speed when done accelerating. The distance is not 400 m! That is the total length of the race track. For the second part the car will stay at the top speed for whatever amount of distance is left in the race track. Solve this second part using the equation for constant speed.

Step 1: Show all your work in determining the distance traveled while accelerating and the top speed at the end of the acceleration

Step 2: Show the two different areas of the race track on the drawing below. Divide the track into one section where the car was accelerating and the other moving at constant top speed. Make sure to show how much distance is covered in each section



Step 3: Find the time required to travel the second part of the track while the car was moving at top speed

Step 4: Find the total time the car took to travel the 400 m. Enter the answers into your program to make sure you did everything correctly