

Two Stages of Motion Problem Level 2

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 time and the distance the car travels while accelerating. For the second part the car will stay at the top speed for whatever amount of time is remaining in your 20 second total interval. Solve this second part using the equation for constant speed.

Step 1: Show all your work in determining the time and distance traveled while accelerating.

Step 2: Show all the work in determining the time and distance traveled at top speed.

Step 3: Find the total distance traveled during the 20 seconds of this two stage motion. Enter the answers into your program to make sure you did everything correctly

Step 4: On the track below, show where the car starts, where it is after 20 seconds, and where it was when it was finished accelerating.

