

E:(20 pts) Drag Race

Two cars compete in a drag race along a straight track of length $L = 200m$, starting from rest. Car #1 has constant acceleration $a_1 = 9m/s^2$ and car #2 has constant acceleration $a_2 = 8.9m/s^2$. To make up for this, the driver of car #2 cheats by creeping forward by a distance $x = 20cm$, a few seconds before the start of the race. Who wins the race? Please support your answer... What is the winning *time* margin Δt ? I.e. how much longer does it take the loser to reach the finish line? What is the winning *distance* margin Δx ? I.e. how far behind is the loser, when the winner crosses the finish line?

•(8pts) Circle the number of the winning car: #1 OR #2

•(6pts) $\Delta t =$ _____

•(6pts) $\Delta x =$ _____



