Answer on Question #40938, Physics, Mechanics | Kinematics | Dynamics

Question:

A racecar, traveling at constant speed, makes one lap around a circular track of radius r in a time t. Determine the magnitude of the average velocity of the car for one complete lap.

Answer:

Velocity is a vector, having both a direction and a magnitude. Average velocity equals:

$$|\overrightarrow{v_a}| = \frac{displacement}{time}$$

For complete lap displacement equals 0. Therefore average velocity equals:

$$|\overrightarrow{v_a}| = \frac{0}{t} = 0$$

Answer: 0