PROBLEMS 59

12-118. Cars move around the "tralfic circle" which is in the shape of an ellipse. If the speed limit is posted at 60 km/h, determine the minimum acceleration experienced by the passengers.

='=12-120. The car B turns such that its speed is increased by bii = (0.5t'') m/s", where t is in seconds. If the car starts from rest when 0 = 0°, determine the magnitudes of its velocity and acceleration when / = 2 s. Neglect the size of the car. Also, through what angle 0 has it traveled?

Prob.12-118 Prob.12-120

•12-119. The car B turns such that its speed is increased by i'B = (0-5e') m/s", where t is in seconds. If the car starts from rest when 6 = 0°, determine the magnitudes of its velocity and acceleration when the arm >1B rotates 0 = 30°. Neglect the size of the car.

•12-121. The motorcycle is traveling at 1 m/s when it is at A. If the speed is then increased at v = 0.1 m/s", determine its speed and acceleration at the instant t = 5 s.

y = 0.5.V-

Prob.12-119 Prob.12-121