4-Trajectory tracking control

For the tracking problem to be soluble, it is necessary that the desired Cartesian trajectory $(x_d(t), y_d(t))$ is admissible for the kinematic model (11.13), i.e., it must satisfy the equations

$$\begin{aligned} \dot{x}_d &= v_d \cos\theta_d \\ \dot{y}_d &= v_d \sin\theta_d \\ \dot{\theta}_d &= \omega_d \end{aligned} \tag{11.57}$$

Prove