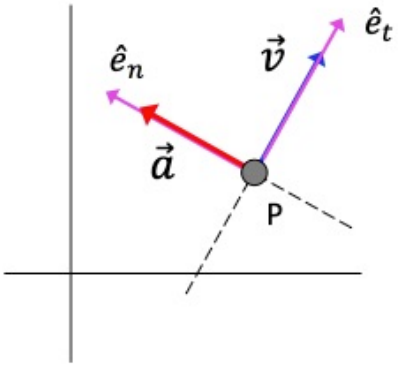
ME 274 – Spring 2024 ***SOLUTION***
Quiz 1 – 1:30 section
Worksheet

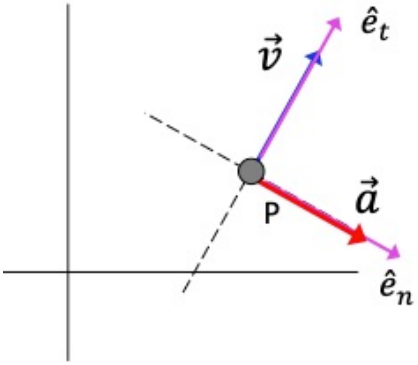
Given the direction of the velocity $\vec{v}$ of point P, as shown in the figures below. For each of the six situations below, sketch the path unit vectors $\hat{e}_t$ and $\hat{e}_n$, along with the acceleration vector $\vec{a}$.

Recall: $\vec{a} = \dot{v}\hat{e}_t + \frac{v^2}{\rho}\hat{e}_n$.

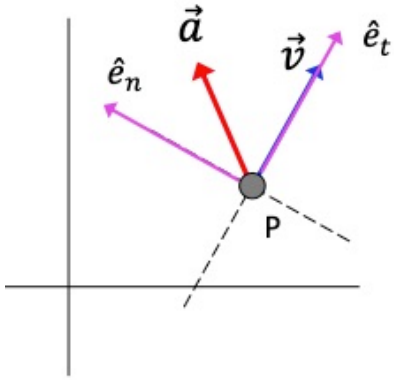
a) P having constant speed and turning left



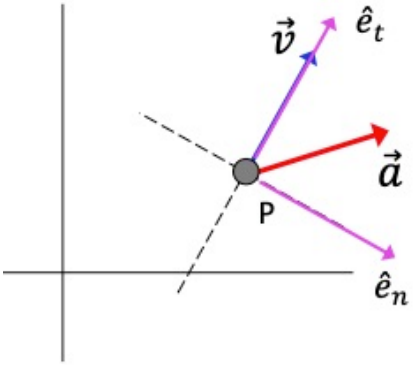
b) P having constant speed and turning right



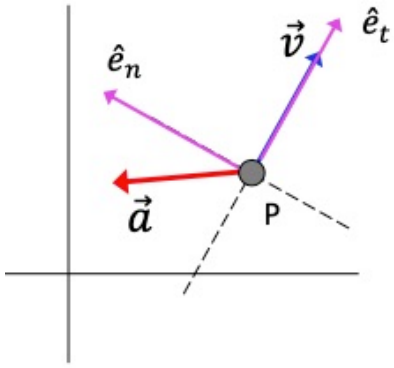
c) P increasing in speed and turning left



d) P increasing in speed and turning right



e) P decreasing in speed and turning left



f) P decreasing in speed and turning right