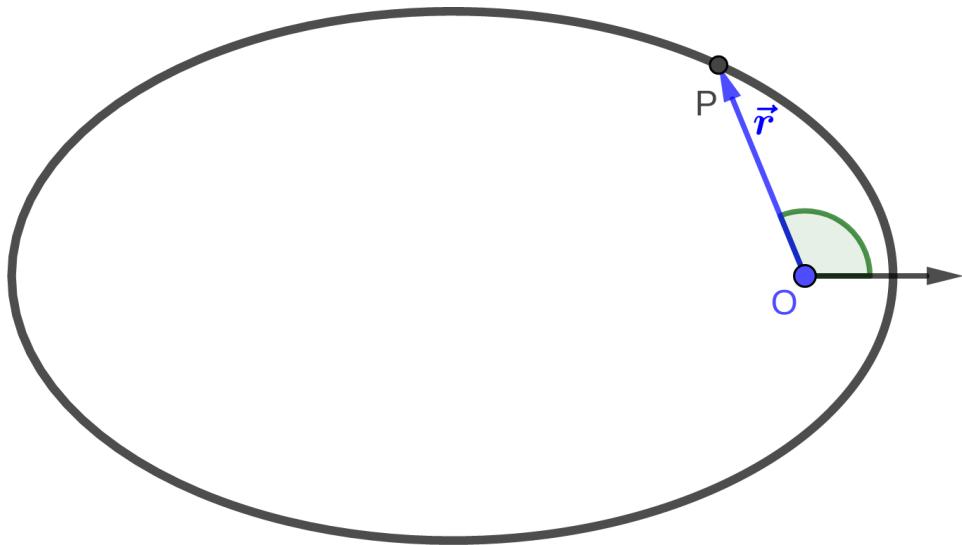


1. On the figure below, draw \hat{s} and $\hat{\phi}$ at P .



2. Find $\frac{d}{dt} \hat{s}$ and $\frac{d}{dt} \hat{\phi}$ in terms of \hat{s} and $\hat{\phi}$.

3. Find \vec{v} in terms of \hat{s} and $\hat{\phi}$.