

Last name:

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First name:

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No Name = No grade. Write your name **NEATLY**. If I can't read it, you get **NO** credit.

Circle your section: 810 811 812

Failure to circle the correct section will delay the return of this quiz.

You are given expressions for the polar unit vectors in terms of the cartesian unit vectors:

$$\begin{aligned}\hat{r} &= \cos\theta\hat{i} + \sin\theta\hat{j} \\ \hat{\theta} &= -\sin\theta\hat{i} + \cos\theta\hat{j}\end{aligned}$$

Start with the the position vector $\vec{r} = r\hat{r}$ and calculate the velocity vector \vec{v} expressed in *polar* coordinates.

It is OK to copy from your notes.

Answer: $\vec{v} =$ _____