


Write the path description for the circle in terms of unit vectors with the initial position at $t = 0$ as the origin. Assume constant speed v and counter-clockwise motion. Use the Cartesian coordinates of the center and of the circle to determine the direction of the velocity vector. Express the answer in terms of the unit vectors \hat{i} and \hat{j} . Express your answer in terms of v .

	\hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j}
	\hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j}
	\hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j}
	\hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j}
	\hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j}
	\hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j} \hat{i} \hat{j}

6. Answer questions:
1. Do any paths cross? Under what conditions? _____
 2. Do any paths cross at the origin? Under what conditions? _____
 3. Do any paths cross at the center of the circle? Under what conditions? _____
 4. Do any paths cross at the edge of the circle? Under what conditions? _____
 5. Do any paths cross at the top of the circle? Under what conditions? _____
 6. Do any paths cross at the bottom of the circle? Under what conditions? _____