

MA 227-01 §10.1-10.3	Quiz #1	<i>score</i>	Name: _____ <div style="text-align: right;">14 June 1999</div>
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1. For each of the following equations, determine if there is a closely matching graph on the next page. If there is, report its Letter. If there is not, write NO MATCH. (6 points)

- (a) $\mathbf{r}(t) = \langle \sin t, \cos t, |\sin(5t)| \rangle$ _____
- (b) $\mathbf{r}(t) = \langle \cos t, \sin t, e^{t/5} \rangle$ _____
- (c) $\mathbf{r}(t) = \langle \cos t, t, \sin t \rangle$ _____
- (d) $\mathbf{r}(t) = \langle t, t^2, t^3 \rangle$ _____
- (e) $\mathbf{r}(t) = \langle t^2, t, t^3 \rangle$ _____
- (f) $\mathbf{r}(t) = \langle \cos(2t), \sin(2t), \sin(3t) \rangle$ _____

2. Find the length of the curve given by $\mathbf{r}(t) = t \mathbf{i} + t^2 \mathbf{j} + \frac{2}{3}t^3 \mathbf{k}$ from the point (0, 0, 0) to the point (3, 9, 18). (5 points)

3. Let $\mathbf{r}(t) = \cos t \mathbf{i} + \sin t \mathbf{j} + 4t \mathbf{k}$.

(a) Find the unit tangent and unit normal vectors at the point $(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}, 3\pi)$. (5 points)

(b) Find the value of the curvature at every point on the curve. (4 points)

Graphs for Quiz 1
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