You can share my answers

NAME: (print!) _Joe Barr_ Section: 24

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q5FirstLast.pdf) ASAP BUT NO LATER THAN Sept. 21, 8:00pm

1, Find the curvature for
$$\mathbf{r}(t) = \sin t\,\mathbf{i} + \cos t\,\mathbf{j} + t\,\mathbf{k} \quad .$$

$r'(t) = \cos(t)\hat{i} + \sin(t)\hat{j} + K$

$r''(t) = -\sin(t)\hat{i} - \cos(t)\hat{j} + 0\hat{k}$

$$\chi(t) = \frac{\|r'(t) \times r''(t)\|}{\|r'(t)\|^3} = \frac{\sqrt{2\cos^2(t) + \sin^2(t)}}{\sqrt{(\cos^2(t) + \sin^2(t))^3}}$$

2.: Find the velocity, acceleration, and speed of a particle with the given position function.
$$\mathbf{r}(t) = t\,\mathbf{i} + t^2\,\mathbf{j} + 5\,\mathbf{k} \quad .$$

$v(t) = \dot{i} + 2t\dot{j} + 0K$

$a(t) = 0\dot{i} + 2\dot{j} + 0K$

$s(t) = \|\dot{\vec{v}}(t)\|$

$\qquad = 2t$