

Quiz #5; Tuesday, date: 02/20/2018
MATH 53 Multivariable Calculus with Stankova
Section #117; time: 5 – 6:30 pm
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Student name:

1. Find the tangential and normal components of the acceleration vector.

$$\mathbf{r}(t) = t\mathbf{i} + 4e^{t/2}\mathbf{j} + 2e^t\mathbf{k}$$

2. *True / False?* Suppose the curve $\mathbf{r}(t)$ goes through the origin. A new curve formed by shrinking the curve $\mathbf{r}(t)$ towards the origin by a factor of 2. (In other words, a point \mathbf{v} is shrunk to $\mathbf{v}/2$.) The curvature is multiplied by a factor of 2 as well.
3. *True / False?* For a smooth space curve $\mathbf{r}(t)$ that is on the x, y -plane, the binormal vector (when defined) must either be \mathbf{k} for all t or $-\mathbf{k}$ for all t , depending on which way the curve is traversed.