

Krithika Patrachari

Attendance Question 1

Let $a=9$
7th RUID digit

$b=6$
9th RUID digit

Find the curvature of the curve $r(t) = \langle t^a, t^b, t^{2a} \rangle$ at point $\langle 2a, 2b, 4a \rangle$

$$\langle t^9, t^6, t^{18} \rangle = \langle 18, 12, 36 \rangle$$

$$t^9 = 18 \quad t^6 = 12 \quad t^{18} = 36$$

t dne

$$r'(t) = \langle 9t^8, 6t^5, 18t^{17} \rangle$$

$$r''(t) = \langle 72t^7, 42t^4, 306t^{16} \rangle$$

$$r'(t) \times r''(t) = \begin{vmatrix} i & j & k \\ 9t^8 & 6t^5 & 18t^{17} \\ 72t^7 & 42t^4 & 306t^{16} \end{vmatrix} = (6t^7(306t^9) - 18t^{17}(42t^6))i - (9t^8(306t^{16}) - 18t^{17}(72t^2))j + (9t^8(42t^6) - 6t^7(72t^2))k$$

$$\frac{|r'(t) \times r''(t)|}{|r'(t)|^3} = \text{no value of } t \text{ will make this possible}$$

Attendance Question 2

Who is your favorite rock band?

I don't listen to rock music that often, so my favorite band in general is Pretty Much.