

HT #4

#1

$$r(t) = \langle t, t^2, t^3 \rangle \quad p = (1, 1, 1)$$

$$t=1$$

$$r'(t) = \langle 1, 2t, 3t^2 \rangle \quad r''(t) = \langle 0, 2, 6t \rangle$$

$$d) |r'(t)| = \sqrt{1 + 4t^2 + 9t^4} \rightarrow 10t^2 - 6t$$

$$e) \frac{|r'(t) \times r''(t)|}{|r'(t)|^3} = \frac{2\sqrt{1 + 4t^2 + 9t^4}}{(1 + 4t^2 + 9t^4)^{3/2}}$$

$$\begin{aligned} \approx |r'(t) \times r''(t)| &= \sqrt{36t^4 + 36t^2 + 4} \\ &= 2\sqrt{9t^4 + 9t^2 + 1} \end{aligned}$$

$$t=1 \rightarrow K(1) = 0.16642335 \approx 0.17$$

$$t=1$$

$$r'(t) = \langle 1, 2, 3 \rangle$$

$$r''(t) = \langle 0, 2, 6 \rangle$$

$$K(1) = 0.17$$

$$f(x) = \frac{\sqrt{3x-5}}{x^2-5x+4}$$

$$3x-5 \geq 0$$

$$x \geq \frac{5}{3}$$

$$x^2-5x+4 \neq 0$$

$$(x-1)(x-4) \neq 0$$

$$x \neq 1$$

$$x \neq 4$$

$$\text{Dominio } \left\{ x \geq \frac{5}{3} \mid x \neq 1 \quad x \neq 4 \right.$$

