(a) $I(\tau_0) = P = (1e^{\frac{\pi}{3}} \int_{0}^{3} e^{\frac{\pi}{3}} ds)$
(e ^{to} esto) = $P = (1 e^{t/3}, \sqrt{3} e^{t/3}, 2)$ (e ^{to} esto) = $P = (1 e^{t/3}, \sqrt{3} e^{t/3}, 2)$ $P = (1 e^{t/3}, \sqrt{3} e^{t/3}, 2)$ $P = (1 e^{t/3}, \sqrt{3} e^{t/3}, 2)$
e ento = 1 e v3
To = 1/3
Comp o votar languate unitories ::
Carry & July
f(t) = f(t)
\\ \[\frac{1}{4} \(\tau \) \]
(t) = e(exot - 120mt)) + e'(exot + 120mt);
(j'(t)) = \((e^t(esst - point))^2 + (e^t(esst + point))^2
1/1+) = V2 2+ (enft - 2 coot bent + bent + cot + 2 cot 12 ent + bent)
1fitil = \(\sqrt{2}e^{9t} - \sqrt{2}e^t \)
$T(+) = \left[e^{t} (esst - bant) \hat{1} + e^{t} (esst + bant) \hat{j} \right]$
Abrim: Vi et
$\vec{\tau}_{(t)} = \sqrt{2} \left[(exat - bent) \hat{i} + (exat + bent) \hat{j} \right]$
2
Já o volar marmal Unitária;
$\vec{\nabla}(t) = \vec{T}(t)$
17'(+)
T(t) = 12 (-bunt - exxt) 1 + (- womt + exxt) 1]
$T(t) = \sqrt{2} \left(-bant - egot \right) \hat{i} + \left(-bant + egot \right) \hat{j}$ $ T(t) = \sqrt{2} \left[\sqrt{(-bant - egot)^2} \hat{i} + (-bant + egot)^2 \hat{j} \right]$
17(+)= 13/2[V(pent + 2 pent post + los) + (pent - 2 cost pent + lost)
17(+1) = 13/2 V2 (000° T + 1000° t)
Fin = 3/2 = 1,
$\vec{N}(t) = \sqrt{2} \left[(-vant - cost) \vec{i} + (egst - vant) \hat{j} \right]$
To= 1/3:
N(To) = V9 (-15em (1/3) - ex) (1/3)) 1 + (ex) (1/3) - 15em (1/3))]
N(To) = \(\frac{1}{9}\)\(\frac{1}{2}
$ \frac{\vec{N}(\tau_0) = \sqrt{9/2} \left[\left(-\sqrt{3}/2 - \frac{1}{2} \right) \vec{1} + \left(\frac{1}{2} - \sqrt{3}/2 \right) \vec{1} \right]}{\vec{N}(\tau_0) = \left[-\sqrt{6} - \sqrt{2} \vec{1} + \sqrt{2} - \sqrt{6} \vec{1} \right]} $ FORCE
FORON

Assira a caus cas de Mana morand da curata na torta P tora:	10
P = (4 et sty of 2)	-
1/170) = -46-45 1 + 12-46 j	
M(10) 10 - 10 1	-
PR. N(To) = 0	
4	
1 1/32 (3/9 , 5/9 1/3) (3/9 - 1/6)	
(x-3e ^{1/3})-16-19+(y-13e ^{1/3})(\frac{12-16}{2})=0	
Logo o plane Normal pará:	
: (x-1/2 e 1/6) (-1/6-1/2) + (y-1/3 e 1/3) (1/2-1/6) = 0	
4	
	<i>p</i>
	ř
	3
	-
	Communities (Propp)
	and State September 1

b) +≥0 reparametrize a courie C polo comprimento de orco.
T(t) = etaatit et Homt g + 2k, + EIR
S(t) = $\sqrt{(x'(t))^2 + (y'(t))^2 + (z'(t))^2} dt$
S(H) = (()) () () () () ()
$x(t) = e^t expt + e^t (-point)$
Y(t) = et yent + et goot
7'(+)=0
Appim: t
5(t)= /(e (exst- Went))2 + (e (Went + exst))2 + 02 dt
5(+)= 1 \(\sigma^2 + \text{tows} + \text{toms} + tom
547=1 Let (exot + bent) dt
S(+)= [T et Ja dt
S(+)= 1/2 et dt
G(+)-759 [et']
S(t) = V2 [e-e]
= S(t) = \[\fallet - 1 \]
Indanda at:
5+1= e [†]
5+3 = e [†]
Vg
t = Im fa + 1
Lage:
t ≥ 0
5 2 0
: (5) = (35 + 1) ex (1m) 3/5 + 1) 1+ (35+1) xxm (1m) 3/5+1) 1 + 2K
l