Start here for Question Number:

@ O relock = x

anelenter = x

in a coherten is the densitie of volenty

 $\int 4\cos 2t \, dx = \left[\frac{4}{2} \sin 2t + C \right]$

= 25m2++C.

v at t=0 0 1.

1 = 25m2++C

v= 25,n2++1

(i) when particle is at cost v=0, x=0.

0=2sn2++1

-1 = Zsin2 +

-1/2 = Sm2+

t= 15

(i) displacement = x.

[25,n24 +1 = -2 5002+++

- Sh

$$g'=2x$$
. Sub $x=-1$.

$$y-y_1 = m(x-x_1)$$

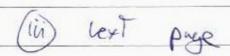
 $y-1=-2(x+1)$

$$m = \frac{3}{3}$$
 $m = 1$. Sub who $g' = 2x$.

indposit of AB is
$$\left(\frac{3}{2}, \frac{3}{2}\right)$$
 $M=\left(\frac{3}{2}, \frac{3}{3}\right)$

Let is vertical if
$$|m| > 1$$
.

Grad $MC = \frac{-5/4}{2/2}$, $m = \frac{-5/4}{4}$
 $|-5/4| > 1$, so MC is vertical



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Samp	le 2
(ii) Find T. Where MC and target of A	
ntexet.	
A tayort: g=-2x-1	
ML:	
grad = - 3/4.	
4-4 = m(x-x,)	
G-1/4=-4/2/	
G-1/4= -7/4 (x-1/2) = -5/4x + 5/8	
4= -5/4 x + 7/8	
Smultoeans egucton.	
-5/4x + 7/3 = -2x-1	
-44x + 13/8 = -2x	
15/8 = -13/4 x	
X=-15/26. Sub No angual	
g= 2/13.	
$g = -2(-\frac{15}{26}) - 1$ $g = \frac{2}{13}.$ $T(-\frac{5}{26}, \frac{2}{13})$	
grad of BT = Dx = 50/13/19/26 = 100	
y' = Zx	
$\frac{100}{119} = 2x$	
$\chi = \frac{50}{119}.$	
At x = 119, le tanget to te come is	
I'me RT	