Modele 1: Tamong a bot Here we going to work through a nasty both of Senetian, that will require als to askall 4 (timesano) No: The foreston will not deadle onything to trust he marks. This will give a confidence to dive into wext set questions. Consider he raker nosky fluction  $f(x) = \frac{Sn(2x^5+3x)}{e^{7x}}$ 

The essence of the Sim, Prochet and Chain Alule are about breaking heglischen dam into manageble Prece Softenst Thing to Spot, is had although it is connorty expressed as a fraction we con reunte for a a PRODUCT: by Maring he denominator (Bottompary) - and raying it to be power of -1  $|\widehat{R}| = \left(\sin\left(2x^5 + 3x\right)\right)e^{-7x}$ But there is also another rule in dealing with fractions directly, Called to auotient Rule, Butil regums hemorizing on Extra Expression

so we want be coverigit Rose. Next, we gott for up crito 2 parts of proclust; and want out how to doppenentate each part separately, ready to apply he product rule lateran. firstfort: Called g(x) Sin( $2x^5+3x$ ) 9G2) he have the triggnometres fenction sin applied to a polynomial (2x5+32), which is a classical to get for he chain rule all we need todo is take our fereton, and split it aparts sports, in order to appear to aparts, in order

$$g(u) = \sin(u)$$

$$u(x) = 2x^5 + 3x$$

Do we have 2 separate flanchins, and differentiate each of hown, to apply Chair rule.

$$g(u) = Sun(u) \rightarrow g'(u) = CoS(u)$$

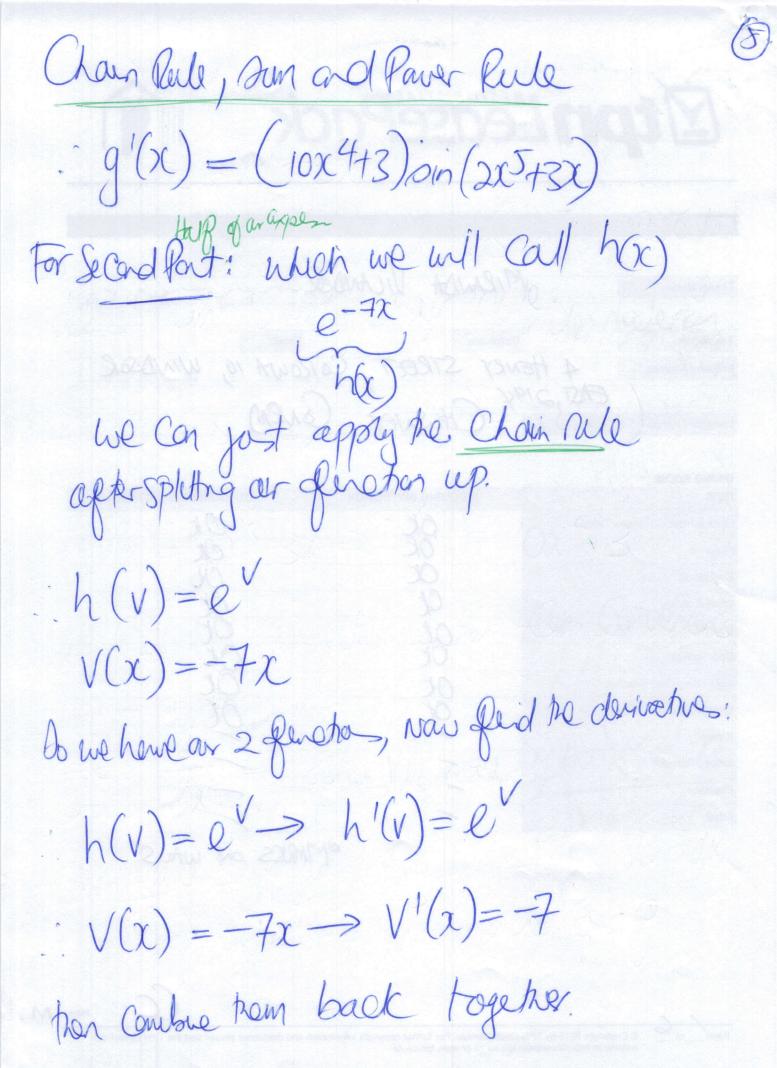
$$u(x) = 2x^5 + 3x - 3u(x) = 10x^4 + 3$$

Next we'll be a mixed notation for Comence:

$$\frac{dg}{dt} \cdot \frac{dt}{dx} = \cos(u)(10x^{4}+3)$$

$$\frac{dg}{dx} = Gas \left(2x^5 + 3x\right) \left(10x + 43\right)$$

we now have an expression flow he deventre g(x), and already we made us g



dh dr = 7e-72 -> h(x)=-7e 72

Poallvis have dispressed so his is ar

final expression.

Po Nav we have expression flor Both part
of ar product

We can just apply he product rule,
to generale he floral answer.

of dg h + gdh drc = dx h + gdh

=  $(6x^4+3)$  Cos( $6x^5+3x$ )  $e^{7x}+ sin(2x^5+3x)(-7e^{-7x})$ Con also then be reasonaged: (adexpressed in floring ways) =  $e^{-7x}$  [ (10x 4+3) Cos( $6x^5+3x$ ) -  $73i(6x^5+3x)$ ]

 $= \frac{(6x443) \cos(5x543x)}{e^{7x}} - 7 fx$