Question 1

What would be the derivative of the function $f(x) = \sin x$?

j'be) = lim	flx+x).	- f (x)	min(A+B) =	
1 1→0	h		01m(A)(0	S(B)+
= lim	pintz+	1) - sinz	/Cos	(A) sin(3)
<i>~</i> →0		h		•
= lim	printed cost	h) + cus la) sm t	15 A :	= x = h
4-30		h		
- lim	oinse (co	sh-1) + 0	ioshilisin h	
^ →		sh-1) + C		
= lim	pinz	cost-1	cosx sint	^
~	0	105h-1 +	- &	
			A= 1/	z
Here him cosh-1	= O ,	How?	Din2A=	1- cos(zA)
~30 h				2
lum cost	-1 _ lim	- 20in 2 (h)	2) = len-1	(2/2). on/h2
4->0 4	T 1.3	0 4	450	4/2
			=(1).0	. 1=0]
				_
= lim ai	oa cosh-	1) + lim	cosx sinh	
~ →0	- (n	1 450		1
= nnx	lim west	P + 105	x lim six	R
	1-30 4		130	h
= Cosx				

	the derivative of $f(x) = x^{-} \sin(x)$.	_
d-c	$(x^2 \sin x) = \frac{d}{dx}(x^2) \sin x + x^2 \frac{d}{dx}(\sin x)$	x .
	$= 2a_{51772} + 5i^2 \cos x.$	
	= 26 (25,522 + 26,052)	