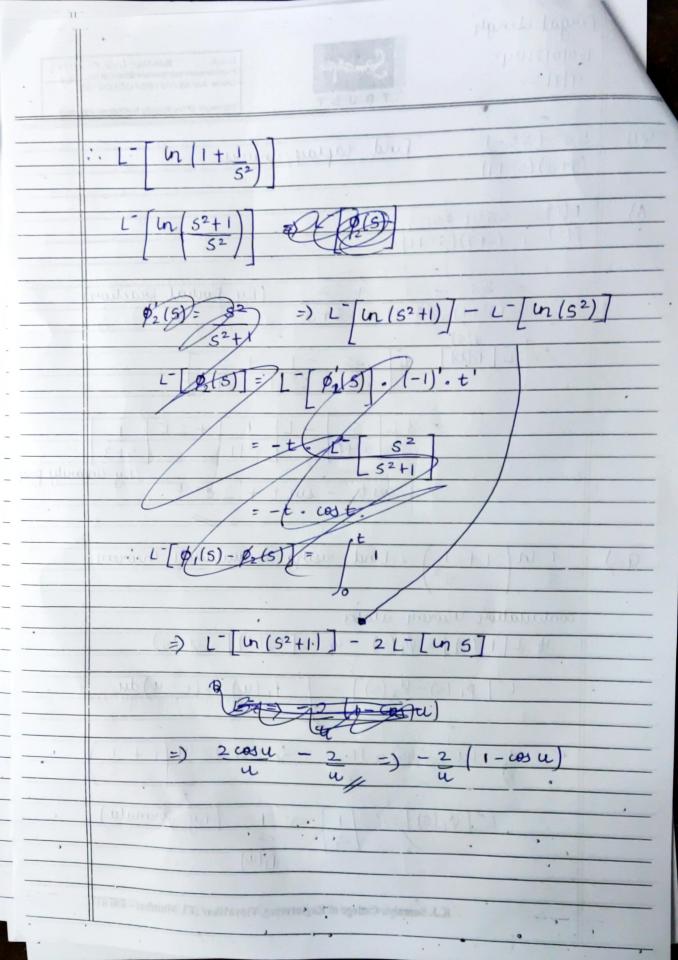
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Q1)	55 ² +85-1	Eind laplace	unierse.
	(5+3)(52+1)	-	
A	(De) = 552 + 85	5-1-1-10	THE NOW PORT
	Ø(5) (s+3)(s		
	2.0		(By Partial fraction)
_	(5^2+1) (5^2+1) $(5+3)$ d(5) \vdots $L[+(10)] = L[-35] - 1 + 2$		
-			
S ² +1 S ²			1 5+3
	5	3 [5] - [1 + 2 [1
		52+1	52+1 5+3
	(By wearuty prop		
	$= 3 \cos t - \sin t + 2 e^{-3t}$		
		y what t	
92)	1 h 1+1). Eind using consulation theorem.		
	5 5 ²)		
	Consulation theorem states:		
•	4 L filt] = Pi(s) · 4 L [f2(t)] = 92(s)		
	$L^{-}[\phi_{1}(5)-\phi_{2}(5)] = \int_{0}^{t} f_{1}(u) \cdot f_{2}(t-u) du$		
	in a let \$ (5) = 1 q \$ 2(5) = 4n 1 + 1		
	in a let of	5	, 52
,			
	$L^{-}[\phi_{1}(5)] \Rightarrow L^{-}[1] \Rightarrow 1$ (By formula)		
	[3]		
	41(0)		
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:.
$$L^{-}[\phi_{1}(5) - \phi_{2}(5)] = \int_{0}^{1} (-2)(\cos u - 1) du$$

By consulation theorem.

f(t+T) otherwise

T

$$= \frac{Kt + K}{T}$$

$$L[f(t)] = \frac{1}{1-e^{-st}} \int_{0}^{t} e^{-st} kt dt$$

(F(t)

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$$= \underbrace{K}_{T(1-e^{-5t})} \int_{0}^{T} e^{-5T}t \ dt$$

$$= \underbrace{K}_{T(1-e^{-5t})} \left[t \left(e^{-5t} \right) - \int_{0}^{T} dt \ e^{-3t} dt \ dt \right]$$

$$= \underbrace{K}_{T(1-e^{-5t})} \left[Te^{-5T} - \left[e^{-5T} - e^{-5T} - \left[e^{-5T} - e^{-5T} - e^{-5T} - e^{-5T} - e^{-5T} - e^{-5T} \right] \right] \right]$$