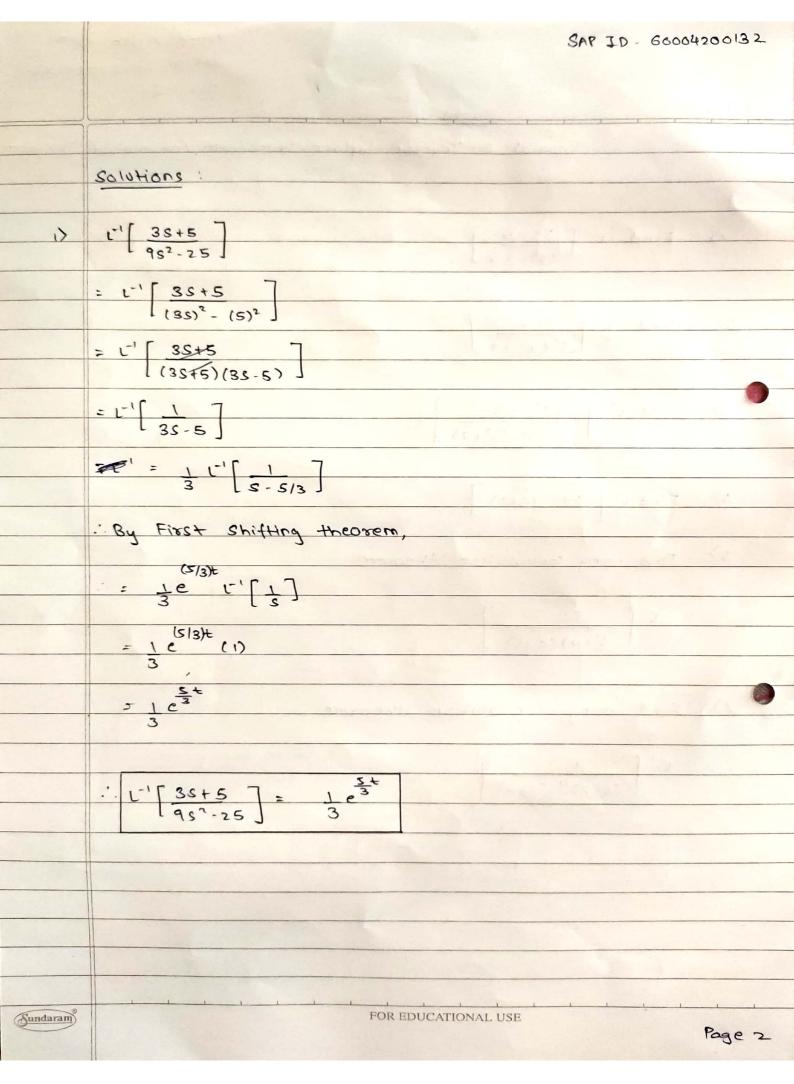
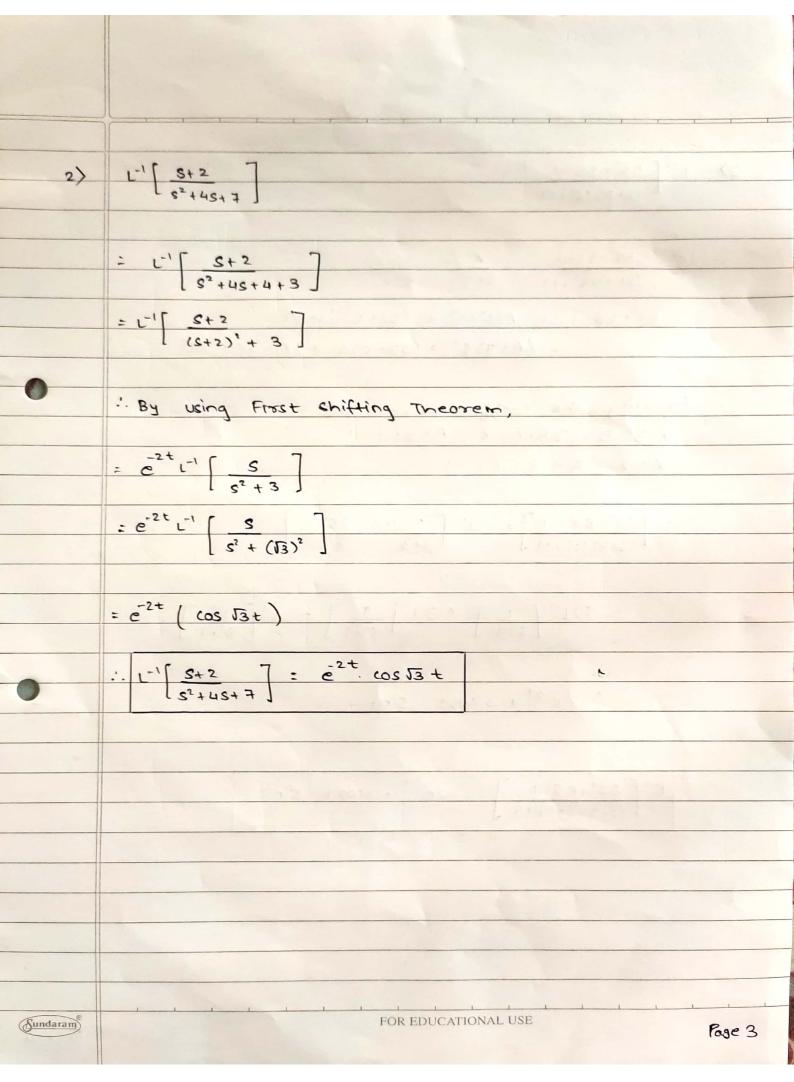
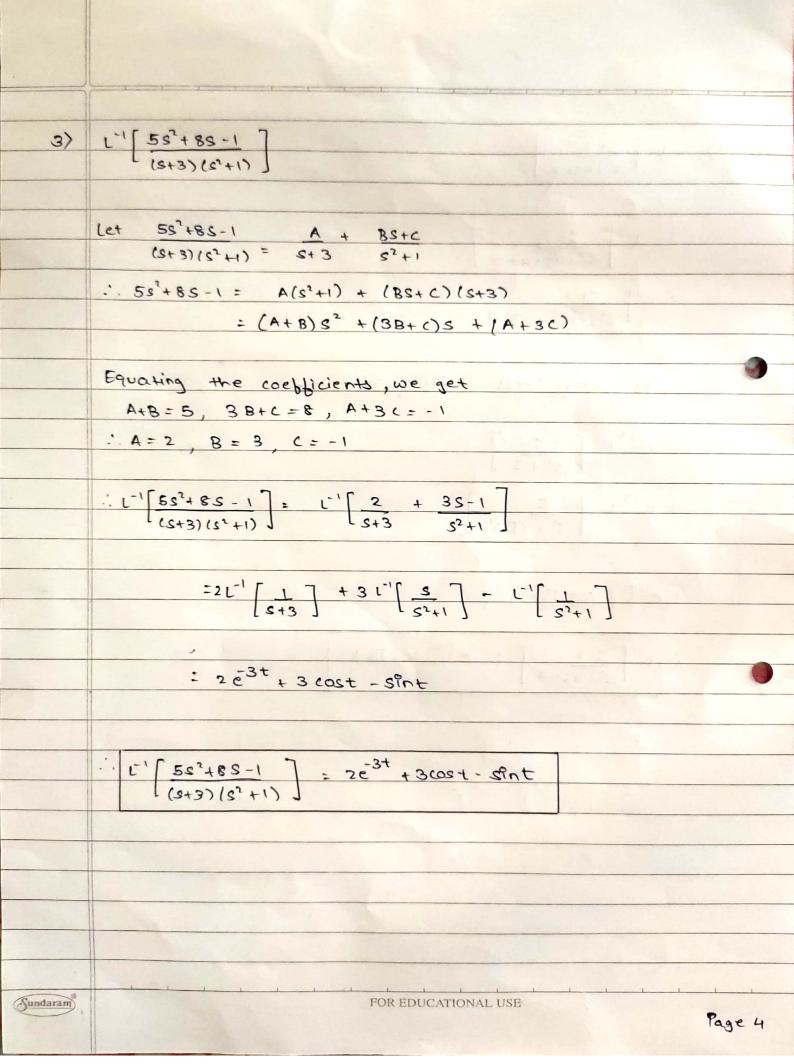
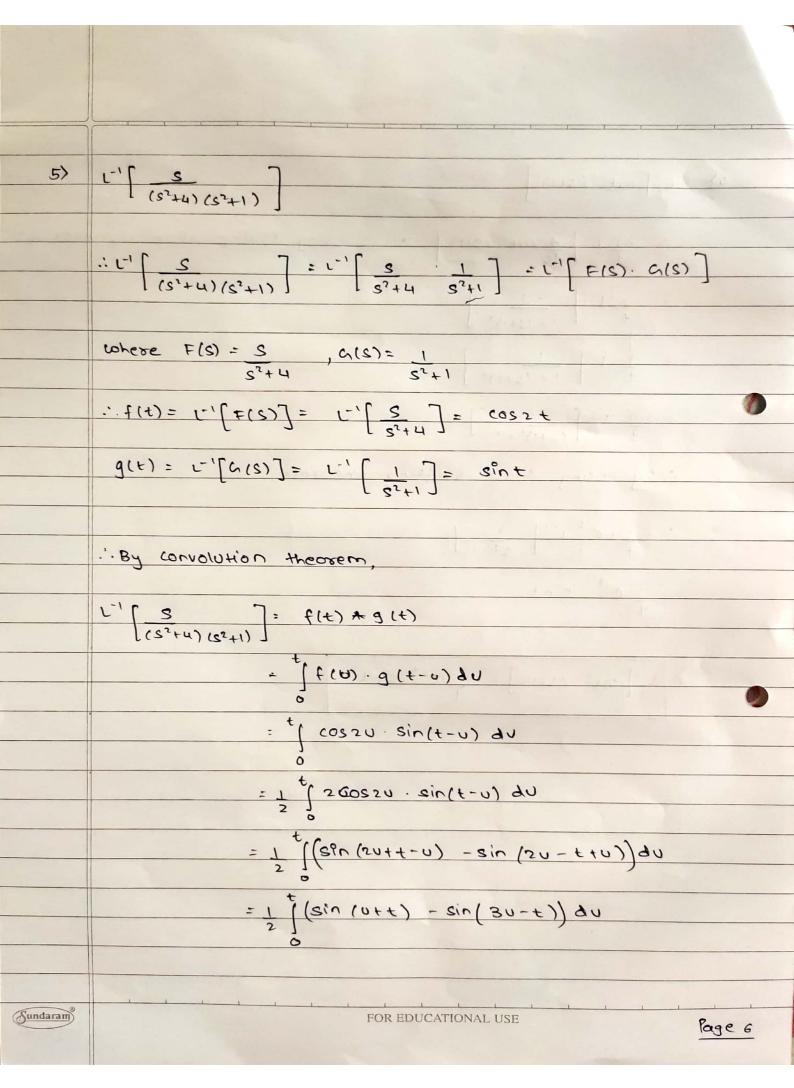
	Name-Ayush Jain
	SAP ID - 6000 4200132
	Div - JI
26/11/2021	Mathe - 111
	Tutorial 3 - Inverse laplace Transform, Convolution Theorem
	10 jo vice of an verse to joseph jo
1>	Find 1-1 [ 35+5]
	78 - 23 )
2)	Find L' [ S+2 ]
	[ 52 + 45 + 7 ]
	Les de la
3>	C-1 11 5 52 + 85 - 1 ]
	Find L' $\left[ \frac{5s^2 + 8s - 1}{(s+3)(s^2+1)} \right]$
.\	
47	Find L-1 [ Cot-1 (S+1)]
	amend the first form
5>	Find using convolution theorem
	בין ג
	[2' [ S ] (S2+1)]
6>	
6/	Find using convolution theorem
	L-1 (S-2)4 (S+3)
	(S-2) (S+3)
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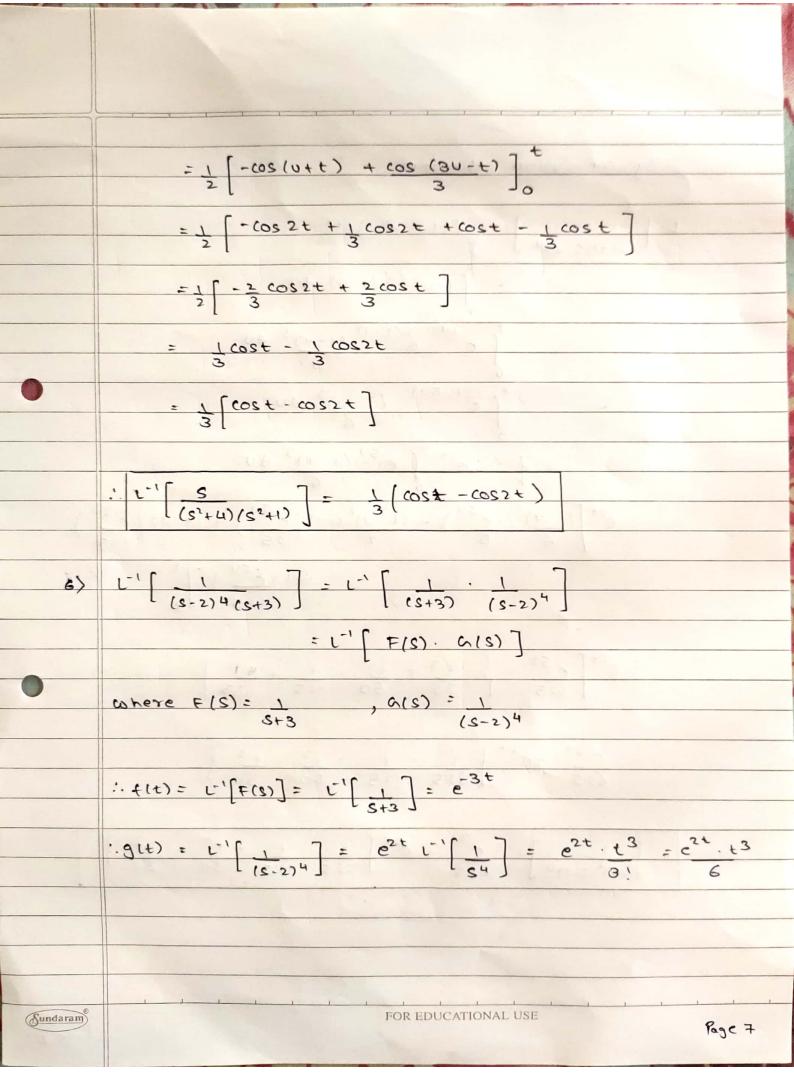






4>	L-1[cot-1(st1)]
	= -1 [-1 d cot-1 (SH)] Using multiplication of power of t
	t 1+ (s+1) <sup>2</sup>
•	$ = \frac{1}{t} \frac{1}{1 + (s+1)^2} $ $ = \frac{1}{t} \frac{1}{(s+1)^2 + 1} $
	: By using First shifting theorem,
	$= \underbrace{1 \cdot e^{t} \cdot \left[ \underbrace{s^{2}+1} \right]}_{= \underbrace{1 \cdot e^{t}}}$
•	: [ (ot (st))] = 1.e-t.sint
Sundaram	FOR EDUCATIONAL USE lage 5





.. By convolution theorem,  $[(s+3)(s-2)^4] = f(t) * g(t)$ = f(0). g(t-0) du = | e e e (t-u) 3 du = t (2t-5u). (t-u)3 du = e2+ + e-50 (+-u)3 du  $= e^{2t} \left[ (t-u)^3 \left( -\frac{c}{2} \right) - (t-u)^2 \left( -1 \right) \left( \frac{c}{2} \right) + (t-u) \left( \frac{c}{2} \right) \right]$ +(1)/e ) 7 t  $= e^{2t} \left[ e^{-5t} - \int_{-\frac{1}{2}}^{-\frac{1}{2}} + \frac{1}{2} - \frac{1}{2} + \frac{1}{2} \right]$  $= e^{-3t} - e^{2t} \left[ 1 - t + t^2 - t^3 \right]$ FOR EDUCATIONAL USE Sundaram Page 8