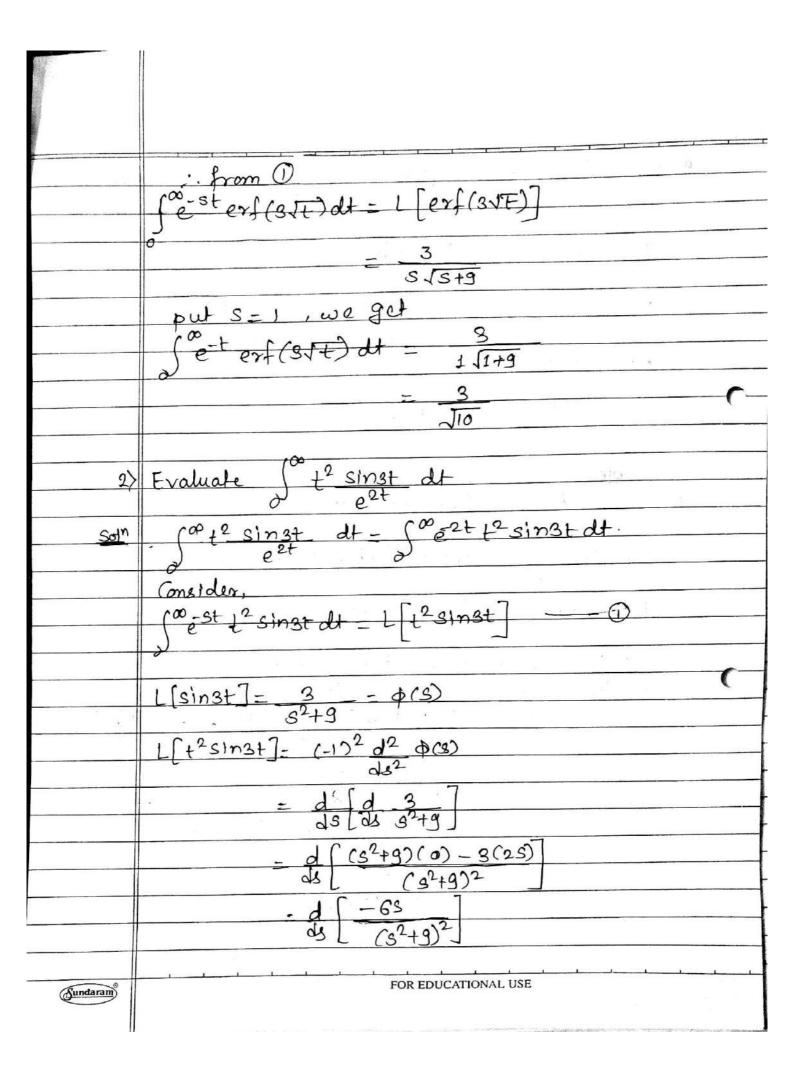
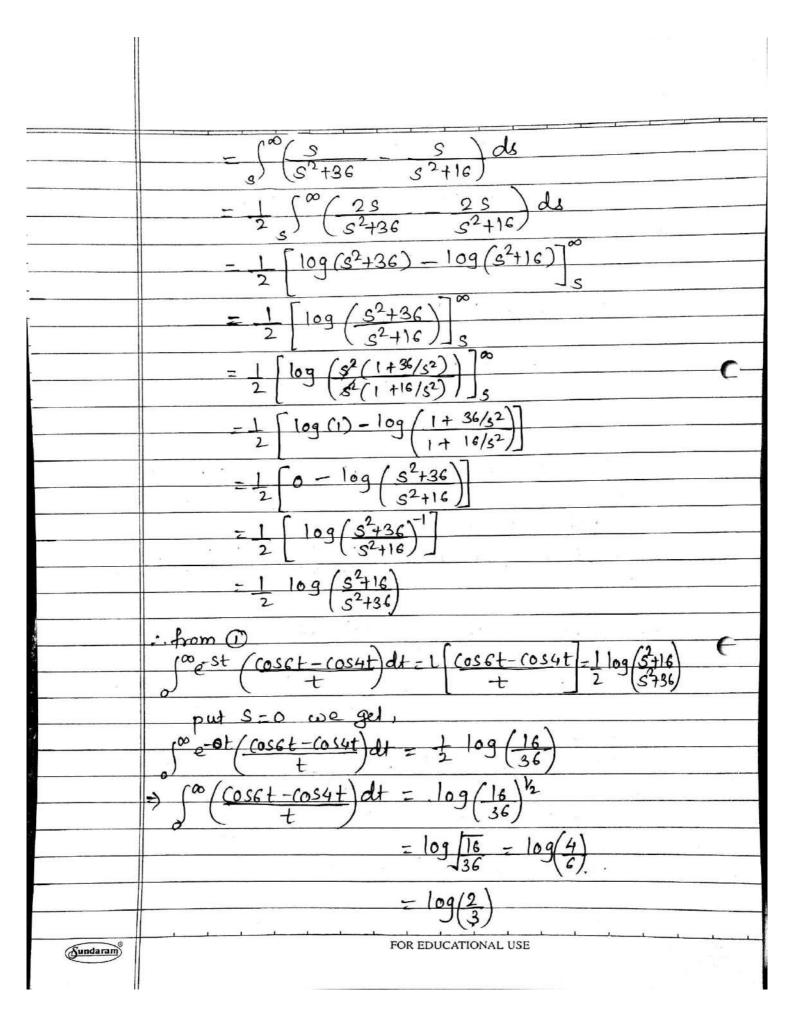
	•	Evaluation of integration using Laplace Transform i.e. evaluation of seatf(+) et
		To evaluate of eatf(+) dt.
		· First consider (o - stf(+) dt = L[f(+)]= +(s) - 0 (just by replacing a by sin problem)
		· then put sza in 1 we get
(-		$\int_{0}^{\infty} e^{-at} f(t) dt = \phi(a)$
		Problems 100 to 100
	·	Evaluate joéterf (3VF) dt
	San	Consider josterf(3VF)dt - L[erf(3VF)] -0
		[[exf(F] =] = \P(S),
		f(+)= exf (+ =) f(at)= exf (at.
+		we know by Change of Scale property
		$\frac{1}{a}\left(\frac{a}{a}\right)$
		where L[f(+)]=φ(3)
		:. L[exf(3VF)] = L[exf. 19+]
		- 1 \$ (s) - here azg
		-1.1
		9 5 5 +1
		= 1 3 - 3
		S S S S S S S S S S S S S S S S S S S
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	- 11	and the state of t



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4)	Evaluate joet jt sing du dt
Sin	Consider,
	Consider, of sing du dt - 1 [f sing du] - 0
	$1(\sin u) = \frac{1}{5^2 + 1} = \phi(3)$
	5^2+1
	$L(siny) = \int_{s}^{\infty} \phi(s) ds$
-	$-\int_{-\infty}^{\infty} ds$
	= [+an'(s)] = +an'0 - +an's
	2,3
	$= \frac{17}{2} - \tan^{2} s = \cot^{2} s = \phi_{1}(s)$
	.1[sinu du] = 1 0,(0) = 1 cot75
t	from () soe-st st sinu du dt = [sinu du] - 1 cot 1s
	put s=1 we get,
	CO + 14
	Set sinu du dt = 1 cot(1)
	= <u>T</u> I
	4
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5) If (e-2+ sin(++x) cos(+-x) dt = 1 find x Som Consider, msider, $\{\infty \in St : Sin(t+x) : Cos(t-x) : dt = L[sin(t+x) : Cos(t-x)]$ [[sin(++x)(os(+-x)]=] [sin(++x++-x)+sin(++x-(+-x)) = 11 sin(2t) + sin(x+x-x+x) = 1 1 sin2+ sin2x] $=\frac{1}{2}\left[\frac{2}{s^2+4}+\sin^2\left(\frac{1}{5}\right)\right]$ from (1) Joest sin(++x) cos(+-x) dt = 1 [sin(++x) cos(+-x) put s=2 we get $\int_{0}^{\infty} e^{-2t} \sin(t+x) \cos(t+x) dt = \frac{1}{2} \left[\frac{2}{4+4} + \frac{\sin(2t+x)}{2} \right]$ Also (= 2t sin (++x) (05 (+-x) dt = 1 (given) $\frac{1}{2} \left(\frac{2}{84} + \sin 2x \right) - \frac{1}{4}$ $\frac{1}{4} + \frac{\sin 24}{2} = \frac{2}{4} \Rightarrow \frac{\sin 24}{2} = \frac{2}{4} = \frac{1}{4}$ $\Rightarrow \frac{|S|n2d=\frac{2l}{42}}{|S|n2d=\frac{1}{2}} \Rightarrow \frac{|Z|}{2} \Rightarrow \frac{|Z|}{|S|n2d=\frac{1}{2}} \Rightarrow \frac{|Z|}{|Z|} \Rightarrow \frac{|Z|}{$ FOR EDUCATIONAL USE Sundaram