

Laplace transforms for S-38.110 TVT I

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1 Laplace transforms

You may keep these tables of Laplace transforms with you in the examinations of the S-38.110 course.

Table 1: Laplace transforms I

$f(t)$	$F(s)$
$f(t)$	$\int_{0-}^{\infty} e^{-st} f(t) dt$ (1)
$e^{-at} f(t)$	$F(s + a)$ (2)
$f'(t)$	$s(F(s) - f(0-))$ (3)
1	$\frac{1}{s}$ (4)
e^{-at}	$\frac{1}{s + a}$ (5)
$(1 - at)e^{-at}$	$\frac{s}{(s + a)^2}$ (6)
$\frac{-e^{-at} + e^{-bt}}{a - b}$	$\frac{1}{(s + a)(s + b)}$ (7)
$\frac{ae^{-at} - be^{-bt}}{a - b}$	$\frac{s}{(s + a)(s + b)}$ (8)

Table 2: Laplace transforms II

$f(t)$	$F(s)$
$\frac{(c-b)e^{-at} + (a-c)e^{-bt} + (b-a)e^{-ct}}{(a-b)(b-c)(c-a)}$	$\frac{1}{(s+a)(s+b)(s+c)} \quad (9)$
$\frac{-a(c-b)e^{-at} - b(a-c)e^{-bt} - c(b-a)e^{-ct}}{(a-b)(b-c)(c-a)}$	$\frac{s}{(s+a)(s+b)(s+c)} \quad (10)$