Table of Laplace Transforms

Please *memorize* the following table of Laplace transforms. When doing this, please remember that a and s can be complex numbers.

$f(t)$	$F(s)$	
1	$\dfrac{1}{s}$	The Heaviside function gives the same F.
e^{at}	$\dfrac{1}{s-a}$	This rule includes the sine and cosine rules.
te^{at}	$\left(\dfrac{1}{s-a}\right)^2$	For problems with resonance.
$b_1 f_1(t) + b_2 f_2(t)$	$b_1 F_1(t) + b_2 F_2(t)$	This rule allows partial fractions.
$\dot{f}(t)$	$sF(s) - f(0)$	This transforms differential equations into algebra.
$\ddot{f}(t)$	$s^2 F(s) - \dot{f}(0) - sf(0)$	This transforms differential equations into algebra.