f(t)	F(s)
af(t) + bg(t)	aF(s) + bG(s)
tf(t)	-F'(s)
$t^n f(t)$	$(-1)^n F^{(n)}(s)$
f'(t)	$sF(s) - f(0^-)$
f''(t)	$s^2F(s) - sf(0^-) - f'(0^-)$
$\frac{1}{t}f(t)$	$\int_{s}^{\infty} F(\sigma)  d\sigma$
$e^{at}f(t)$	F(s-a)
f(t-a)u(t-a)	$e^{-as}F(s)$
f(at)	$\frac{1}{a}F(\frac{s}{a})$
$\delta(t)$	1
$\delta(t- au)$	$e^{-\tau s}$
u(t)	$\frac{1}{s}$
u(t- au)	$\frac{1}{s}e^{-\tau s}$
$t^n \cdot u(t)$	$\frac{n!}{s^{n+1}}$
$e^{-\alpha t} \cdot u(t)$	$\frac{1}{s+lpha}$
$\sin(\omega t) \cdot u(t)$	$rac{\omega}{s^2+\omega^2}$
$\cos(\omega t) \cdot u(t)$	$\frac{s}{s^2 + \omega^2}$

For the LaTeXfile see https://github.com/joey-kilgore/playground and look for the practiceTransforms folder