TABLE OF INVERSE LAPLACE TRANSFORMS

	$F(s)$	$f(t) = \mathfrak{L}\{F(s)\}$
1.	$\frac{1}{(s-a)(s-b)}$	$\frac{1}{a-b}(e^{at} - e^{bt})$
2.	$\frac{s}{(s-a)(s-b)}$	$\frac{1}{a-b}(ae^{at} - be^{bt})$
3.	$\frac{1}{s(s^2+a^2)}$	$\frac{1}{a^2}(1 - \cos at)$
4.	$\frac{1}{s^2(s^2+a^2)}$	$\frac{1}{a^3}(at - \sin at)$
5.	$\frac{1}{(s^2+a^2)^2}$	$\frac{1}{2a^3}(\sin at - at\cos at)$
6.	$\frac{s}{(s^2+a^2)^2}$	$\frac{t}{2a}\sin at$
7.	$\frac{s^2}{(s^2+a^2)^2}$	$\frac{1}{2a}(\sin at + at\cos at)$
8.	$\frac{s^2-a^2}{(s^2+a^2)^2}$	$t\cos at$
9.	$\frac{1}{(s-a)^2+b^2}$	$\frac{1}{b}e^{at}\sin bt$
10.	$\frac{s-a}{(s-a)^2+b^2}$	$e^{at}\cos bt$

PROPERTIES OF THE LAPLACE TRANSFORM: $F(s) = \mathfrak{L}\{f\} = \int_0^\infty e^{-st} f(t)\,dt$

1. $\mathfrak{L}\{f+g\} = \mathfrak{L}\{f\} + \mathfrak{L}\{g\}$
2. $\mathfrak{L}\{cf\} = c\mathfrak{L}\{f\}$
3. $\mathfrak{L}\{f'\} = s\mathfrak{L}\{f\} - f(0)$
4. $\mathfrak{L}\{f''\} = s^2\mathfrak{L}\{f\} - sf(0) - f'(0)$
5. $\mathfrak{L}\{f^{(n)}\} = s^n\mathfrak{L}\{f\} - s^{n-1}f(0) - s^{n-2}f'(0) - \cdots - f^{(n-1)}(0)$
6. $\mathfrak{L}\{e^{at}f(t)\} = F(s-a)$
7. $\mathfrak{L}\{t^n f(t)\} = (-1)^n \frac{d^n}{ds^n}F(s)$
8. $\mathfrak{L}\{f(at)\} = \frac{1}{a}F\left(\frac{s}{a}\right)$
9. $\mathfrak{L}\{f * g\} = \mathfrak{L}\{f\}\,\mathfrak{L}\{g\}$
10. $\mathfrak{L}\left\{\int_0^t f(\tau)\,d\tau\right\} = \frac{1}{s}F(s)$
11. $\mathfrak{L}\left\{\frac{f(t)}{t}\right\} = \int_s^\infty F(\xi)\,d\xi$
12. $\lim_{s\to\infty} sF(s) = f(0)$
13. $\lim_{s\to 0} sF(s) = f(\infty)$