

TABLE OF LAPLACE TRANSFORMS

$$f(t) \qquad \qquad \qquad F(s)$$

$$1 \qquad \qquad \qquad \frac{1}{s}$$

$$e^{at} \qquad \qquad \qquad \frac{1}{s-a}$$

$$t^n \qquad \qquad \qquad \frac{n!}{s^{n+1}}$$

$$\cos(bt) \qquad \qquad \qquad \frac{s}{s^2+b^2}$$

$$\sin(bt) \qquad \qquad \qquad \frac{b}{s^2+b^2}$$

$$e^{at} f(t) \qquad \qquad \qquad F(s-a)$$

$$t f(t) \qquad \qquad \qquad -\frac{dF(s)}{ds}$$

$$g(t) = f(t-a)u(t-a) = \begin{cases} 0 & : t < a \\ f(t-a) & : t > a \end{cases} \qquad e^{-as} F(s), \quad a > 0$$

$$\int_0^t f(\tau)g(t-\tau) d\tau \qquad \qquad \qquad F(s)G(s)$$

$$f(t+p) = f(t), \quad t > 0 \qquad \qquad \qquad \frac{1}{1-e^{-ps}} \int_0^p e^{-st} f(t) dt$$

$$f^{(n)}(t) \qquad \qquad \qquad s^n F(s) - s^{n-1} f(0) - s^{n-2} f'(0) \\ \qquad \qquad \qquad \dots - f^{n-1}(0)$$