

SHORT TABLE OF LAPLACE TRANSFORMS

| $f(t)$ | $\mathcal{L}\{f(t)\} = F(s)$ |
|--------------------|---|
| 1. e^{at} | $\frac{1}{s-a}$ |
| 2. t^n | $\frac{n!}{s^{n+1}}, \quad n = 0, 1, 2, 3, \dots$ |
| 3. $\sin(bt)$ | $\frac{b}{s^2 + b^2}$ |
| 4. $\cos(bt)$ | $\frac{s}{s^2 + b^2}$ |
| 5. $(f * g)(t)$ | $F(s)G(s)$ |
| 6. $f^{(n)}(t)$ | $s^n F(s) - s^{n-1} f(0) - \dots - f^{(n-1)}(0)$ |
| 7. $e^{ct} f(t)$ | $F(s-c)$ |
| 8. $u_c(t) f(t-c)$ | $e^{-cs} F(s)$ |