## SHORT TABLE OF LAPLACE TRANSFORMS

<table>
<thead>
<tr>
<th>$f(t)$</th>
<th>$\mathcal{L}{f(t)} = F(s)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $e^{at}$</td>
<td>$\frac{1}{s-a}$</td>
</tr>
<tr>
<td>2. $t^n$</td>
<td>$\frac{n!}{s^{n+1}}$, $n = 0,1,2,3,...$</td>
</tr>
<tr>
<td>3. $\sin(bt)$</td>
<td>$\frac{b}{s^2+b^2}$</td>
</tr>
<tr>
<td>4. $\cos(bt)$</td>
<td>$\frac{s}{s^2+b^2}$</td>
</tr>
<tr>
<td>5. $f * g(t)$</td>
<td>$F(s)G(s)$</td>
</tr>
<tr>
<td>6. $f^{(n)}(t)$</td>
<td>$s^nF(s) - s^{n-1}f(0) - ... - f^{(n-1)}(0)$</td>
</tr>
<tr>
<td>7. $e^{ct}f(t)$</td>
<td>$F(s-c)$</td>
</tr>
<tr>
<td>8. $u_c(t)f(t-c)$</td>
<td>$e^{-cs}F(s)$</td>
</tr>
<tr>
<td>9. $\delta(t-c)$</td>
<td>$e^{-cs}$</td>
</tr>
</tbody>
</table>