

## Useful Equation

### 1 Equation

$$\sum_{k=0}^{\infty} \frac{\lambda^k}{k!} = e^{\lambda}$$

### 2 Approximation

$$\lim_{x \rightarrow 0} e^x = 1 + x$$

### 3 Integral

$$\int u dv = uv - \int v du$$

### 4 Combination

$$\binom{j-1}{k} + \binom{j-1}{k-1} = \binom{j}{k}$$