

2) GUMBER

$$m_Y = 40 \quad \sigma_Y = 10$$

$$\alpha = \frac{\pi}{\sqrt{6} \sigma_Y} = 0.1283$$

$$\mu = m_Y - \frac{\gamma}{\alpha} = 35.50$$

$$F_Y(y) = e^{-e^{-\alpha(y-\mu)}} \quad -\infty \leq y \leq \infty$$

$$\begin{aligned} P[30 \leq Y \leq 60] &= F_Y(60) - F_Y(30) = e^{-e^{-\alpha(60-\mu)}} - e^{-e^{-\alpha(30-\mu)}} \\ &= 0.9577 - 0.1321 = \underline{\underline{0.8257}} \end{aligned}$$