$$p(y) = \frac{\lambda^y}{y!} \exp(-\lambda)$$

a) $Y \leq 4 \quad (\lambda = 5)$.

$$P(Y \leq 4) = P(Y=0) + P(Y=1) + P(Y=2) + P(Y=3) + P(Y=4).$$

$$= e^{-5}\left[\frac{5^0}{0!} + \frac{5^1}{1!} + \frac{5^2}{2!} + \frac{5^3}{3!} + \frac{5^4}{4!}\right]$$

$$= 0.4405.$$

b) $$P(Y > 4) = 1 - P(Y \leq 4)$$

$$= 1 - 0.4405$$

$$\doteq 0.5595$$