

Lösung Aufgabe 1:

- $x=20$
- $r=4$
- $\pi=0.09$

$$\begin{aligned}P(X = 20 + 4) &= \frac{(20 + 4 - 1)!}{(4 - 1)! \cdot 20!} \cdot 0.09^{(4-1)} \cdot (1 - 0.09)^{20} \cdot 0.09 \\ &= 0.01760374\end{aligned}$$



Lösung Aufgabe 2:

- $\lambda=0.30$

$$P(X = 0) = \frac{0.3^0}{0!} \cdot e^{-0.3} = 0.74081822$$

$$P(X = 1) = \frac{0.3^1}{1!} \cdot e^{-0.3} = 0.22224546$$

$$P(X = 2) = \frac{0.3^2}{2!} \cdot e^{-0.3} = 0.03333681$$

$$P(X = 3) = \frac{0.3^3}{3!} \cdot e^{-0.3} = 0.00333368$$



Lösung Aufgabe 2:

$$P(X \leq 3) = P(X = 0) + P(X = 1) + P(X = 2) + P(X = 3) = 0.99973417$$

