

Solutions for exercises in chapter 7:

- Exercise 1:

- a) $3/4$
- b) $1/5$
- c) $1/2$
- d) $3/8$
- e) $1/8$
- f) $1/5$
- g) $1/2$

- Exercise 2:

- a) $E[X] = \frac{p}{1-p}$
- b) $V[X] = \frac{p}{(1-p)^2}$

- Exercise 3:

- a) 1
- b) $1/r$
- c) Lower limit 0 and upper limit 1

- Exercise 4:

- a) $E[x_n] = \frac{n}{p}$

- Exercise 5:

- a) $P(V = k) = \left(\frac{\lambda}{\lambda + \mu}\right) * \frac{\mu}{\lambda + \mu}$

- Exercise 6:

- a) $e^{m(z-1)}$
- b) m
- c) m

- Exercise 7:

- a) $P(Z = k) = \frac{(\lambda_1 + \lambda_2)^k}{k!} * e^{-(\lambda_1 + \lambda_2)}$

Solutions for exercises in chapter 8:

- Exercise 4:

- a) [...]

- b) $e^{-\frac{\alpha}{\beta}}$

- c) α/β

- Exercise 5:

- a) $p_1 = 0; p_2 = 0; p_3 = 0; p_4 = 0$

- b) $\lambda + \mu$

- c) $1 - e^{-(\lambda+\mu)t}$

- d) $T_1 = \frac{1}{2\lambda}; T_2 = \frac{1}{\mu}; T_3 = \frac{1}{\lambda+\mu}; T_4 = \infty$

- e) $P(3 \text{ to } 4) = \frac{\lambda}{\lambda+\mu}; P(3 \text{ to } 1) = \frac{\mu}{\lambda+\mu}$

- f) $M_1 = \frac{5\lambda+3\mu}{2\lambda^2}$