$$C_x^n \cdot P^x \cdot q^{n-x} \rightarrow C_7^{16} \cdot 0,6^7 \cdot 0,5^{16-7} = 11440 \cdot 0,6^{16} = 0,174561\ldots$$
$$= 0,1746$$

$$E = \frac{1+8}{2} = 3 \checkmark$$

$$P_{xy}(0,1) = \frac{1}{7} \qquad P_{xy}(1,0) = \frac{2}{7} \qquad P_{xy}(2,2) = \frac{4}{7}$$

$$P_x(0) = \int \frac{1}{7} dy = \frac{1}{7}y$$

$$P_x(1) = \int \frac{2}{7} dy = \frac{2}{7}y$$

$$P_x(2) = \int \frac{7}{7} dy = \frac{4}{7}y$$

3.
$$\frac{e^{-\lambda} \lambda^x}{2!} = \frac{e^{-\lambda} \lambda^x}{3!}$$

$$\frac{3}{\lambda} = \frac{\lambda}{3 \cdot 2 \cdot 1}$$

$$\lambda = 9 = Var(x)$$

$$\frac{(6-1)^2}{12} = \frac{4^2}{12} = \frac{16}{12} = \frac{4}{3}$$

$$M_x(t) = e^{(166t + 200 t^2)}$$
$$E(x) = 166$$

$$\frac{\sigma^2 t^2}{2} \rightarrow \sigma^2 = 400 \qquad Var$$

$$E(x) + Var(x)^2$$
$$400 + 166 = 566$$

$$E(x) = 3 = \mu$$
$$Var(x) = 4 = \sigma^2 \rightarrow \sigma = 2$$

$$P(x > h) = 1 - P(x \le h)$$
$$2P(x \le h) = 1 - P(x \le h)$$
$$3P(x \le h) = 1$$
$$P(x \le h) = \frac{1}{3} \qquad h = \frac{x-3}{2}$$

$$N = 120$$
$$\sigma = 20$$
$$P(x \le 130) = P\left(z \le \frac{130-120}{20}\right)$$
$$= \phi(0,5)$$
$$= 0,6915$$

$$\frac{6 - 4(-1)}{\sqrt{(41-4^2)(20-(-1)^5)}} = \frac{40}{6 \cdot 3} = \frac{40}{63}$$

$$C_2^{10} \cdot 0,05^2 \cdot 0,95^{10-2} = 0,0746$$
$$\sim 7,46\%$$

$$\beta \cdot \frac{6 \cdot 20728 - 417 \cdot 413}{6 \cdot 29091 - 417^2} = 0,4117$$