1. S. 275 Nr. 6

Ergebnisse $E = \{3; 1; 5; 3; 4; 6; 2; 6; 1; 2\}$

$$n = 10$$

$$\bar{x} = \frac{1}{n}(x_1 + x_2 + x_3 + ... + x_n)$$

$$= \frac{1}{10}(3 + 1 + 5 + 3 + 4 + 6 + 2 + 6 + 1 + 2)$$

$$\approx 3.3$$

$$\sigma = \sqrt{\frac{1}{n}((x_1 - \bar{x})^2 + ...(x_n - \bar{x})^2)}$$

$$= \sqrt{0.1((3 - 3.3)^2 + (1 - 3.3)^2 + (5 - 3.3)^2 + ... + (2 - 3.3)^2)}$$

$$\approx \frac{\sqrt{321}}{10} \approx 1.79165$$

2. S. 275 Nr. 7

links:

$$\bar{x} = m_1 \cdot h_1 + ...m_n \cdot h_n$$

$$\bar{x} = 0 \cdot 0.49 + 2 \cdot 0.01 + 4 \cdot 0.01 + 6 \cdot 0.49 \approx 3$$

$$s = \sqrt{(m_1 - \bar{x})^2 \cdot h_1 + ... + (m_n - \bar{x})^2 \cdot h_n}$$

$$= \sqrt{(0 - 3)^2 \cdot 0.49 + (2 - 3)^2 \cdot 0.01 + (4 - 3)^2 \cdot 0.01 + (6 - 3)^2 \cdot 0.49}$$

$$= \sqrt{9 \cdot 0.49 + 1 \cdot 0.01 + 1 \cdot 0.01 + 9 \cdot 0.49}$$

$$= \sqrt{4.41 + 0.01 + 0.01 + 4.41}$$

$$= 2.9732137495$$

rechts:

$$\bar{x} = 0 \cdot 0.01 + 2 \cdot 0.49 + 4 \cdot 0.49 + 6 \cdot 0.01$$

$$\bar{x} = 0.98 + 1.96 + 0.06$$

$$\bar{x} = 3$$

$$s = \sqrt{(0 - 3)^2 \cdot 0.01 + (2 - 3)^2 \cdot 0.49 + (4 - 3)^2 \cdot 0.49 + (6 - 3)^2 \cdot 0.01}$$

$$= \sqrt{0.09 + 0.49 + 0.49 + 0.09}$$

$$= \sqrt{1.16}$$

$$= 1.07703296143$$