

Střední hodnota

reálné náhodné veličiny

Definice

$$EX = \sum_{\omega \in \Omega} P[\{\omega\}] \cdot X(\omega)$$

Příklad

Ω	●	●	●	●	●
P	10%	30%	10%	30%	20%
X	1	2	4	5	2

$$EX = \sum_{\omega \in \Omega} P[\{\omega\}] \cdot X(\omega) = 0.1 \cdot 1 + 0.3 \cdot 2 + 0.1 \cdot 4 + 0.3 \cdot 5 + 0.2 \cdot 2 = 3$$

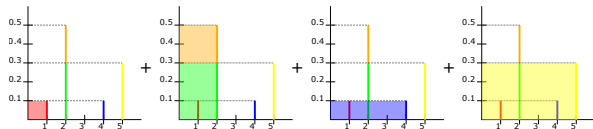
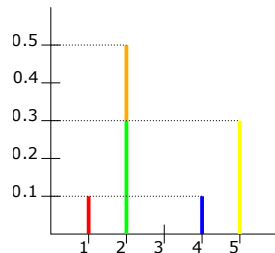
$$\begin{aligned} EX &= 0.1 \cdot 1 + 0.3 \cdot 2 + 0.1 \cdot 4 + 0.3 \cdot 5 + 0.2 \cdot 2 = \\ &= 1 \cdot 0.1 + 2 \cdot (0.3 + 0.2) + 4 \cdot 0.1 + 5 \cdot 0.3 = 3 \end{aligned}$$

$$EX = \sum_{x \in H(X)} x \cdot P[X = x]$$

Vizualizace

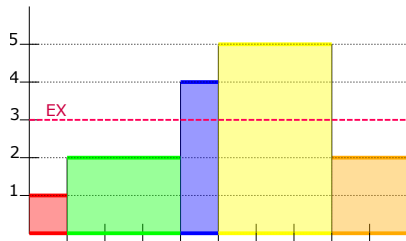
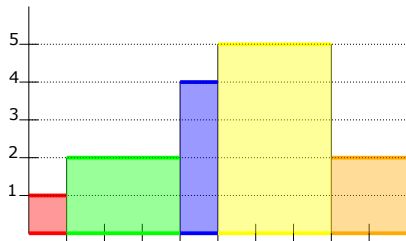
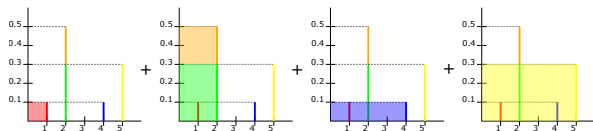
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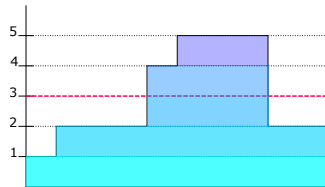
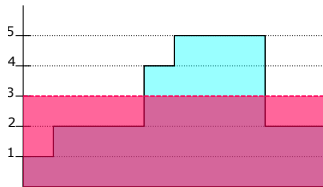
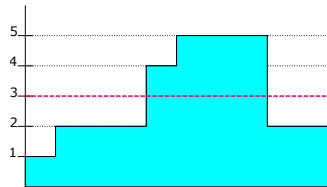


$$EX = \sum_{x \in H(X)} x \cdot P[X = x]$$

Transformace



Plocha



$$EX = \sum_{k=0}^{\infty} P[X > k]$$

pro X nezápornou celočíselnou