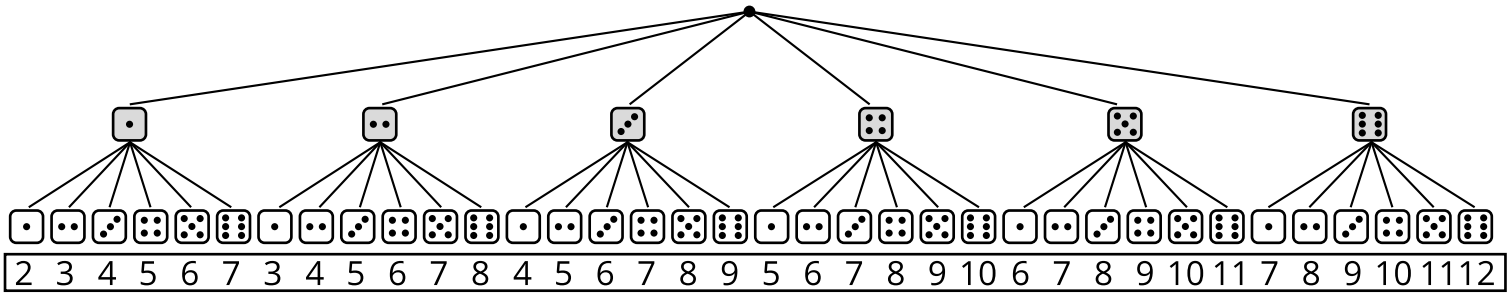
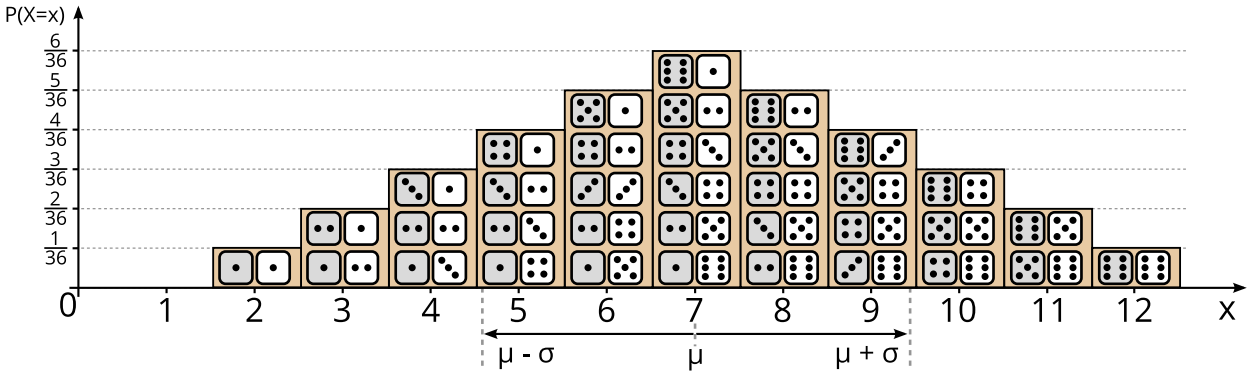
Gleichzeitiges Würfeln mit 2 Würfeln





x	2	3	4	5	6	7	8	9	10	11	12	
P(X=x)	$\frac{1}{36}$	$\frac{2}{36}=\frac{1}{18}$	$\frac{3}{36}=\frac{1}{12}$	$\frac{4}{36}=\frac{1}{9}$	$\frac{5}{36}$	$\frac{6}{36}=\frac{1}{6}$	$\frac{5}{36}$	$\frac{4}{36}=\frac{1}{9}$	$\frac{3}{36}=\frac{1}{12}$	$\frac{2}{36}=\frac{1}{18}$	$\frac{1}{36}$	
$x \cdot P(X=x)$	$\frac{2}{36}$	$\frac{6}{36}$	$\frac{12}{36}$	$\frac{20}{36}$	$\frac{30}{36}$	$\frac{42}{36}$	$\frac{40}{36}$	$\frac{36}{36}$	$\frac{30}{36}$	$\frac{22}{36}$	$\frac{12}{36}$	$E(x) = \mu = 7$
$x^2 \cdot P(X=x)$	$\frac{4}{36}$	$\frac{18}{36}$	$\frac{48}{36}$	$\frac{100}{36}$	$\frac{180}{36}$	$\frac{294}{36}$	$\frac{320}{36}$	$\frac{324}{36}$	$\frac{300}{36}$	$\frac{242}{36}$	$\frac{144}{36}$	$E(x^2) = \frac{329}{6}$

$$Var(X) = E(X^2) - E(X)^2 = \frac{329}{6} - 7^2 = \frac{35}{6}$$

$$\sigma = \sqrt{Var(X)} = \sqrt{\frac{35}{6}} \approx 2{,}415$$

$$P(|X-\mu| < \sigma) = P(4{,}585 < X < 9{,}415)$$

$$= P(X = 5) + P(X = 6) + P(X = 7) + P(X = 8) + P(X = 9)$$

$$= \frac{4}{36} + \frac{5}{36} + \frac{6}{36} + \frac{5}{36} + \frac{4}{36}$$

$$= \frac{24}{36} = \frac{2}{3} \approx 67\%$$