Моделирование выборки из нормального распределения

$a := 2$ $b := 3$ $N := 100$ $k := 0..N-1$ $G_k := a + b\cdot\left(\sin(2\cdot\pi\cdot rnd(1))\cdot\sqrt{-2\cdot\ln(rnd(1))}\right)$

$CG := sort(G)$ $zG := min(CG), (min(CG) + .01)..max(CG)$

$$hG := \frac{(max(CG) - min(CG))}{1 + 3.21\cdot\log(N)}$$ $MG := ceil(max(CG))$

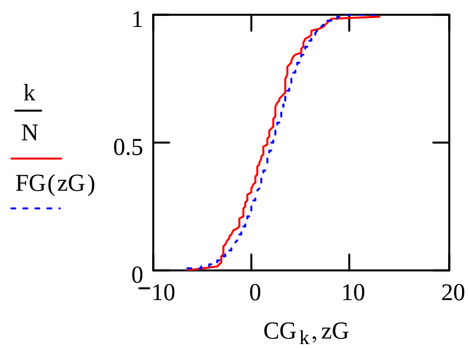
$$FG(x) := \int_{-\infty}^{x} \frac{\exp\left[\frac{-(x-a)^2}{2\cdot b^2}\right]}{b\sqrt{2\cdot\pi}}\,dx$$

$MG = 13$ $j := 0..MG$

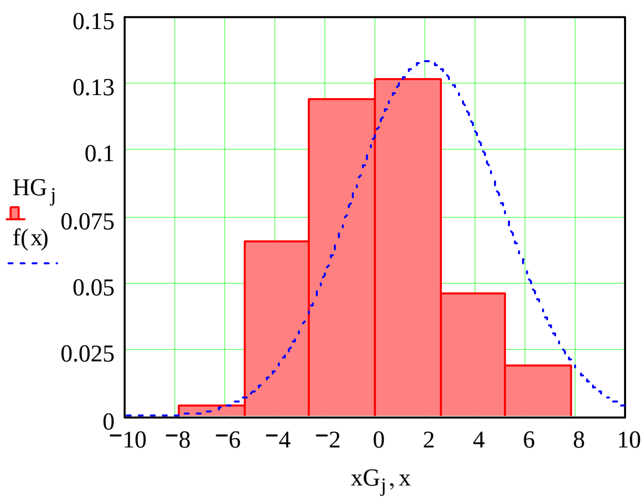
$xG_j := min(CG) + hG\cdot j$

$$HG := \frac{hist(xG, CG)}{N\cdot hG}$$ $HG_{last(HG)+1} := 0$

$$\sum_j HG_j\cdot N\cdot hG = 100$$



$$f(x) := \frac{\exp\left[\frac{-(x-a)^2}{2\cdot b^2}\right]}{b\sqrt{2\cdot\pi}}$$



$mean(CG) = 1.409$

$var(CG) = 9.827$

$$\sum_k \frac{(CG_k - mean(CG))^2}{N} = 9.827$$

$$\frac{MG\cdot var(CG)}{MG-1} = 10.646$$

$stdev(CG) = 3.135$