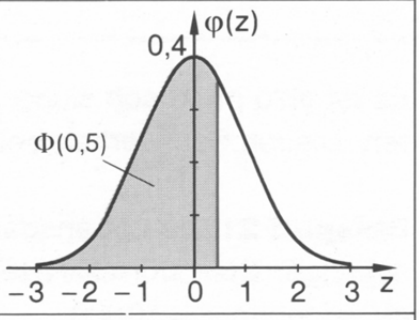
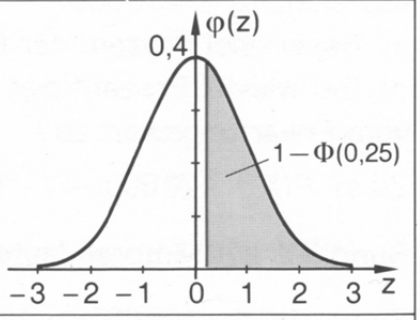
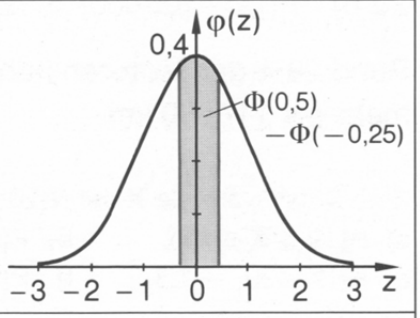
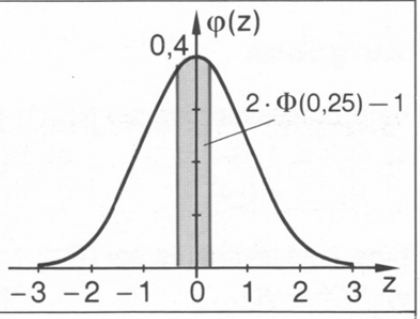
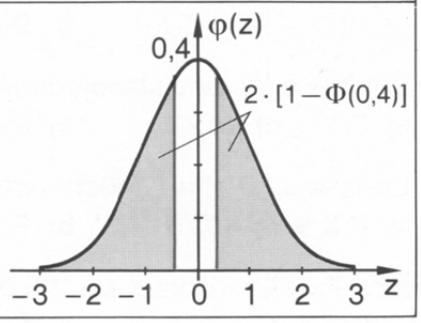
Anleitung – Praxis der Normalverteilung

Allgemein	Zahlenbeispiel ($\mu = 3; \sigma = 2$)	Schaubild
$P(X < x) = P(X \leqq x) = \Phi\left(\frac{x-\mu}{\sigma}\right)$	$P(X < 4) = P(X \leqq 4) = \Phi\left(\frac{4-3}{2}\right) = \Phi(0{,}5) = 0{,}6915$	
$P(X > x) = 1 - P(X \leqq x) = 1 - \Phi\left(\frac{x-\mu}{\sigma}\right)$	$P(X > 3{,}5) = 1 - P(X \leqq 3{,}5) = 1 - \Phi\left(\frac{3{,}5-3}{2}\right) = 1 - \Phi(0{,}25) = 0{,}4013$	
$P(x_1 \leqq X \leqq x_2) = \Phi\left(\frac{x_2-\mu}{\sigma}\right) - \Phi\left(\frac{x_1-\mu}{\sigma}\right)$	$P(2{,}5 \leqq X \leqq 4) = \Phi\left(\frac{4-3}{2}\right) - \Phi\left(\frac{2{,}5-3}{2}\right) = \Phi(0{,}5) - \Phi(-0{,}25) = 0{,}2902$	
$P(\lvert X-\mu \rvert \leqq c) = \Phi\left(\frac{c}{\sigma}\right) - \Phi\left(-\frac{c}{\sigma}\right) = \Phi\left(\frac{c}{\sigma}\right) - \left[1 - \Phi\left(\frac{c}{\sigma}\right)\right] = 2 \cdot \Phi\left(\frac{c}{\sigma}\right) - 1$	$P(\lvert X-3 \rvert \leqq 0{,}5) = 2 \cdot \Phi\left(\frac{0{,}5}{2}\right) - 1 = 2 \cdot \Phi(0{,}25) - 1 = 0{,}1974$	
$P(\lvert X-\mu \rvert > c) = 1 - P(\lvert X-\mu \rvert \leqq c) = 1 - \left[2 \cdot \Phi\left(\frac{c}{\sigma}\right) - 1\right] = 2 \cdot \left[1 - \Phi\left(\frac{c}{\sigma}\right)\right]$	$P(\lvert X-3 \rvert > 0{,}8) = 2 \cdot \left[1 - \Phi\left(\frac{0{,}8}{2}\right)\right] = 2 \cdot \left[1 - \Phi(0{,}4)\right] = 0{,}6892$	

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