

## Zeep

1.  $P(x < 90 \mid \mu = 93 \text{ en } \sigma = 1,4) = \text{normalcdf}(-10^{99}, 90, 93, 1,4) = 0,01601$

De kans dat alle drie stukken zeep minder dan 90 gram wegen is dus:

$$(0,01606)^3 = 4,1 \cdot 10^{-6}$$

2.  $P(x < 460 \mid \mu = 5 \cdot 93 \text{ en } \sigma = 1,4\sqrt{5}) = \text{normalcdf}(-10^{99}, 460, 465, 3,13) = 0,0551$

3.  $P(88,8 < x < 97,2 \mid \mu = 93 \text{ en } \sigma = 1,4) = \text{normalcdf}(88,8, 97,2, 93, 1,4) = 0,9973$

Bij 10 stukken zeep geldt:  $P = (0,9973)^{10} = 0,9733$

De kans is dus  $1 - 0,9733 = 0,03$

4.  $P(90,2 < x < 95,8 \mid \mu = 93 \text{ en } \sigma = 1,4) = \text{normalcdf}(90,2, 95,8, 93, 1,4) = 0,9545$

$$P = (1 - 0,9545)^2 + 0,9545 \cdot (1 - 0,9545)^2 = 0,0040$$