



MATEMATIK F2

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Tekst til opgaver i afsnit 23.8 i 7. ed. (22.9 i 8. ed.):

Opgave 1: Let $f(x, y) = k$ when $8 \leq x \leq 12$ and $0 \leq y \leq 2$ and zero elsewhere. Find k . Find $P(X \leq 11, 1 \leq Y \leq 1.5)$ and $P(9 \leq X \leq 13, Y \leq 1)$.

Opgave 3: Let (X, Y) have the density $f(x, y) = kxy$ if $0 \leq x \leq 1, 0 \leq y \leq 1$ and 0 otherwise. Find k and $P(X > 0.5, Y > 0.5)$.

Opgave 15: Find $P(X > Y)$ when (X, Y) has the density $f(x, y) = e^{-(x+y)}$ if $x \geq 0, y \geq 0$ and 0 otherwise.

Opgave 17: Let (X, Y) have the probability function $f(0, 0) = f(1, 1) = 1/8$, $f(0, 1) = f(1, 0) = 3/8$. Are X and Y independent?

Tekst til opgaver i afsnit 24.6 i 7. ed. (23.3 i 8. ed.):

Opgave 4: Determine a 95% confidence interval for the mean μ of a normal population with variance $\sigma^2 = 9$, using a sample of size 100 with mean 38.25.

Opgave 5: What will happen to the length of the interval in Prob. 4 if we reduce the sample size to 25?

Opgave 7: What sample size would be needed to produce a 95% confidence interval of length (a) 2σ , (b) σ ?

Opgave 8: Assuming that the population from which the sample

325, 320, 325, 335

is taken is normal, determine a 99% confidence interval for the mean μ of the population.