MATEMATIK F2

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Tekst til opgaver i afsnit 23.6 i 7. ed. (22.7 i 8. ed.):

Opgave 1: Four fair coins are tossed simultaneously. Find the probability function of the random variable $X =$ *Number of heads* and compute the probabilities of obtaining no heads, precisely 1 head, at least 1 head, not more than 3 heads.

Opgave 4: Suppose that a telephone switchboard handles 300 calls on the average during a rush hour, and that the board can make at most 10 connections per minute. Using the Poisson distribution, estimate the probability that the board will be overtaxed during a given minute. (Use Table 6 in Appendix 5.)

Opave 7: Suppose that in the production of 50-ohm radio resistors, nondefective items are those that have a resistance between 45 and 55 ohms and the probability of a resistor's being defective is 0.2%. The resistors are sold in lots of 100, with the guarantee that all resistors are nondefective. What is the probability that a given lot will violate this guarantee? (Use the Poisson distribution.)

Tekst til opgaver i afsnit 23.7 i 7. ed. (22.8 i 8. ed.):

Opgave 1: Let X be normal with mean 80 and variance 9. Find
$P(X > 83)$, $P(X < 81)$, $P(X < 80)$, and $P(78 < X < 82)$.

Opgave 3: Let X be normal with mean 14 and variance 4. Determine c such that
$P(X \le c) = 95\%$, $P(X \le c) = 5\%$, $P(X \le c) = 99.5\%$.