MATEMATIK F2

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Tekst til opgaver i afsnit 19.5 i 7. ed. (18.5 i 8. ed.):

Opgave 10: Fit a straight line by least squares to the data

$(s, F) = (0.9, 10),\ (0.5, 5),\ (1.6, 15),\ (2.1, 20),$

s the elongation of an elastic spring under the force F, and estimate from it the spring modulus $k = F/s$. ($F = ks$ is called *Hooke's law.*)

Opgave 12: Use the method of least squares, fit a parabola (7)–(8) to the given data:

(0,3), (1,1), (2,0), (4,1), (6,4).

Tekst til opgaver i afsnit 24.12 i 7. ed. (23.9 i 8. ed.):

In each case find a 95% confidence interval for the regression coefficient κ_1, using the given sample and supposing that Assumptions (A2) and (A3) are satisfied:

Opgave 7: $x =$ humidity of air [%], $y =$ expansion of gelatin [%]

x	10	20	30	40
y	0.8	1.6	2.3	2.8

Opgave 8: Number of revolutions (per minute) x and power y [hp] of a Diesel engine

x	400	500	600	700	750
y	580	1030	1420	1880	2100

Begge opgaver, 7 og 8, suppleres med en udregning af standardafvigelserne $s(k_0)$ og $s(k_1)$ som givet ved ligningerne (4.12) og (4.13) i supplementet.