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Corrections to “Introduction to Cryptography, Second Edition”

April 11, 2005

Springer-Verlag

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- p. 10** In the line before Example 1.7.4. replace a_i by α_i .
- p. 29** last line of Definition 2.1.1: Delete “the” after “divides”.
- p. 42** Proof of Theorem 2.9.5: Theorem 2.9.2 instead of Theorem 2.9.3 (Twice)
- p. 45** Proof of Corollary 2.11.3: Theorem 2.9.2 instead of Theorem 2.9.3.
- p. 59** Lemma 2.19.2: Use a “plain” K .
- p. 68** Exercise 2.22.12: d_i is missing in the sum.
- p. 88** At the bottom the sequence reads c_1, c_2, \dots, c_n . The last entry should be c_u instead.
- p. 93** Equation (3.3): replace z_{i-j} by s_{i-j} .
- p. 95** above example 3.9.3, the p_i should be c_i .
- p. 103** line 2 of 3.13: The name is Blaise *de* Vigenère.
- p. 104/105** Example 3.14.1: The determinant of A is even, and so the cipher is not allowable since it is not relatively prime to $m = 26$. Replace FUSS replaced by FOOT.
- p. 117** line 2: $\Pr(a)$ instead of $P(a)$.
- p. 117** p. 105, line 2 of Definition 4.2.2: The “end quote” should be placed after ‘occurs’ (and not after the B).
- p. 118** line 1 of Example 4.2.3: Delete “probability of the”.
- p. 123** line 9 from below: m should be replaced by p (3 times).
- p. 131** Figure 5.1: replace “Expansionsfunktion” by “expansion function”, “S-Boxen” by “S-boxes” and $f(R, K)$ by $f(K, R)$.
- p. 132** In Table 5.3, description of the function P the positions for 10 and 20 must be switched.
- p. 136** Replace $f(R_0, K_1)$ by $f(K_1, R_0)$.
- p. 136** 4th last and 2nd last lines of Section 5.3: In both strings, the 3rd and 16th bits (from the left) should be changed (that’s a result of the problem with the P-table).
- p. 140** line 9: Those arrays have “four” rows ...x
- p. 168** line 3 of Example 7.2.1: Read $\gcd(3, 220) = 1$. p. 145, line 3 of Example 7.2.5:
- p. 171** Example 8.3.5: 119 should be replaced by 110 (twice), and 26 by 165.
- p. 171** line 8 of 2nd paragraph: 1023 instead of 1024.
- p. 189** line 7 of Section 8.5.4: Read $K = A^b \bmod p$.
- p. 190** last line of first paragraph: Read $g^c \equiv g^{ab} \bmod$.
- p. 192** line 1: $b \in \{0, 1, \dots, p-2\}$.
- p. 223** In equation (10.4) a + is missing:

$$p^{e-1}x = x_0p^{e-1} + p^e(x_1 + x_2p + \dots + x_{e-1}p^{e-2}). \quad (0.1)$$

statt

$$p^{e-1}x = x_0p^{e-1} + p^e(x_1 + x_2p + \dots + x_{e-1}p^{e-2}). \quad (0.2)$$

- p. 244** Line 15: In the definition of SHA-1 we have

$$C = S^{30}(B)$$

instead of

$$C = S^{36}(B).$$

p. 279 Exercise 12.9.5: In the ElGamal signature scheme use the prime number p and the primitive root $g \pmod{p}$. Suppose that $p \equiv 1 \pmod{4}$ and that g has only small prime factors. Let A be Alice's public key.

1. Show that a solution z of the congruence $A^q = g^{qz} \pmod{p}$ can be found efficiently.
2. Let x be a document and let h be its hash value. Prove that $(q, (p - 3)(h - qz)/2)$ is a valid signature of x .

p. 295 The correct formula for the determinant of the Vandermonde matrix is

$$\det U = \prod_{1 \leq i < j \leq \ell} (x_j - x_i).$$



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Introduction to Cryptography

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2004, XVI, 338 p., Hardcover

ISBN: 978-0-387-21156-5