ERRATA LIST

Exercise 1.1.2. This should read
"Suppose that $a \geq 1$ and $b \geq 2$ are integers. Show that we can write a in base b; that is, show that there exist integers $a_0, a_1, \ldots \in [0, b-1]$ for which $a = a_d b^d + a_{d-1} b^{d-1} + \ldots + a_1 b + a_0$."

i.e. At the end we have $a = a_d b^d + a_{d-1} b^{d-1} + \ldots + a_1 b + a_0$ not $a = a_d b^d + a_{d-1} b^{d-1} + a_1 b + a_0$.

Exercise 1.2.1(a). This should read
" Prove that if a and b are not both 0, and d divides both a and b, then d divides $\gcd(a, b)$."

Exercise 2.5.5. The displayed equation there should read:

$$3d_1 - d_2 + 3d_3 - d_4 + \cdots - d_{10} + 3d_{11} \pmod{10}.$$

ie We changed "$-d_4-$" to "$-d_4+$"

The last diagram in Appendix 3A. This shows Pascal's triangle mod 3, 5 and 7. The mod 7 diagram should contain two more rows of larger triangles!

Theorem 4.2. It should be "(Euler)" not "(Euclid)".

Exercise 4.3.16. Add some new parts:
"Let $\tau_3(n)$ denote the number of ways of writing $n = abc$ where a, b and c are integers ≥ 1. Prove that $\tau_3(n)$ is a multiplicative function and determine its value at prime powers."

Section 5.1. Equation (5.1.1) should be

$$"F_n = F_0 \cdots F_{n-1} + 2 \text{ for each } n \geq 1''$$

That is, the product should start with F_0 not F_1.

Just before Section 5.5. In the displayed equation near the top of the page it should be "$a \pmod q$" and "$a \pmod)q$".

Exercise 5.5.1(a). The sum should be for "$n \geq 2$".

Section 5.19. The display above exercise 5.19.4 should read

$$"A = \{a + 2b, a + 4b, a + 8b, \ldots , a + 2^m b\}.''$$

That is, 2^m replaces 2^k.

Section 8.2. The last two sentences before Theorem 8.2 should read:
"The ath entry in the middle column is $+1$ if a is a quadratic residue mod p, and it is -1 if a is a quadratic non-residue mod p; in either case it equals the value of the Legendre symbol, $\left(\frac{a}{p}\right)$. This observation was proved by Euler in 1732."

Exercise 8.9.3(a). Replace

"$(x^2-\alpha)(x^2-\beta)$ or $(x^2-ax+1)(x^2+ax+1)$ or $(x^2-ax+1)(x^2+ax+1)$ "

by

'$(x^2-\alpha)(x^2-\beta)$ or $(x^2-ax+1)(x^2+ax+1)$ or $(x^2-ax-1)(x^2+ax-1)$"

That is, there is a typo in the last factorization.

Exercise 10.7.1. This should read

"Suppose that n is odd with at least two distinct prime factors. Prove that for at least half of the pairs x, y with $0 \leq x, y < n$, $\gcd(x,n) = 1$ and $x^2 \equiv y^2 \pmod{n}$, we have $1 < \gcd(x-y, n) < n$."