Errata

The following errors are in the first and second printings of the book. They have been corrected in the third printing.

page 25 Exercise 9
The definition of a **type 0 integer** is not stated correctly. It should be: An integer a is said to be a **type 0 integer** provided that there exists an integer n such that $a = 3n$.

page 71 Answer for Part (4) of Progress Check 2.1
This answer is not stated correctly. It should be: Being a square is sufficient for a quadrilateral to be a rectangle.

page 93 line 11
It should state $x \neq y$ instead of $x > y$. The line should be:
$(x - y)^2 > 0$. Since $x \neq y$, $(x - y) \neq 0$ and so $(x - y)^2 > 0$. This

page 108 Preview Activity 3
The "of" in the first line of Part (1) should be "or". It should read as follows:

1. See Exercise (8) from Section 3.2 on page 105 for a complete definition of a rational number. Give examples of at least five different rational numbers.

page 111 Progress Check 3.16
There is some extraneous material at the end of Part (3). It should be

3. For all integers a and b, if 5 divides ab, then 5 divides a or 5 divides b.

page 118 Exercise 18
The condition that $a > 1$ should be added to the hypothesis of the conditional statement. It should be:

> For each integer n that is greater than 1, if a is the smallest positive factor of n that is greater than 1, then a is prime.

page 126 Exercise 8
The exercise should have $n \geq 2$ rather than $a \geq 2$. The correct statement is:

> Prove that there are no natural numbers a and n with $n \geq 2$ and $a^2 + 1 = 2^n$.

page 246 Exercise 9
The condition that $x > -1$ should be changed to $x > 0$. The exercise is then:

Use mathematical induction to prove the following proposition:

> Let x be a real number with $x > 0$. Then for each natural number n with $n \geq 2$, $(1 + x)^n > 1 + nx$.

Explain where the assumption that $x > 0$ was used in the proof.

Errata

page 287 Exercise 2
$\mathbb{Z}_6$ is given incorrectly. It should be $\mathbb{Z}_6 = \{0, 1, 2, 3, 4, 5\}$. The complete statement of the exercise is:

2. Let $\mathbb{Z}_6 = \{0, 1, 2, 3, 4\}$. Define $f : \mathbb{Z}_6 \to \mathbb{Z}_6$ by $f(x) = x^2 + 4 \pmod 6$, and define $g : \mathbb{Z}_6 \to \mathbb{Z}_6$ by $g(x) = (x + 1)(x + 4) \pmod 6$

(**a**) Calculate $f(0)$, $f(1)$, $f(2)$, $f(3)$, $f(4)$, and $f(5)$.

(**b**) Calculate $g(0)$, $g(1)$, $g(2)$, $g(3)$, $g(4)$, and $g(5)$.

page 377 The Table Summarizing Theorem 7.11
Two lines are repeated and one is missing. The correct table is:

Formal Statement from Theorem 7.11	**Verbal Description**
For each $a \in A$, $a \in [a]$.	Every element of A is in its own equivalence class.
For each $a, b \in A$, $a \sim b$ if and only if $[a] = [b]$.	Two elements of A are equivalent if and only if their equivalence classes are equal.
For each $a, b \in A$, $[a] = [b]$ or $[a] \cap [b] = \emptyset$.	Any two equivalence classes are either equal or they are disjoint. This means that if two equivalence classes are not disjoint then they must be equal.

page 400 Part (5) of Preview Activity 2
The right parenthese is missing for $\gcd(8, -12)$.

page 469 Exercise 4
A right parenthese is missing in the last line of Part (c). It should be Part (d).

page 512 Index for Proof by Contradiction
There are two listings for "proof by contradiction" under the term "proof."