

Book Errata

for *A First Course in Graph Theory and Combinatorics*
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Despite our best efforts, some typos and errors went undetected in the first version of the book. We list below the known typos/errors.

- Chapter 1

P6: On line 6, remove *closed* before *cycle*.

P6: In the definition of an Eulerian graph, add *without isolated vertices*.

P7: The first part of the proof of Theorem 1.5.1 applies to the each component of the graph.

P8: In Exercise 1.6.5, change $\#E(X)$ to $|E(X)|$.

P9: Exercise 1.6.20: Remove *edges* after *less than or equal to* $\lfloor \frac{n^2}{4} \rfloor$.

- Chapter 2

P15: On line 2, replace $\lfloor x + 1/2 \rfloor$ by $\lfloor x + \frac{1}{2} \rfloor$.

P15: On line 20, change *an involution on $n - 1$ letters* to *an involution on $n - 2$ letters*.

P16: On line 8, change *At the end of each month* to *Every month from the 2nd month on*.

P17: On line 7, change *$n - 2$ nonintersecting diagonals* to *$n - 3$ non-intersecting diagonals*.

P22: In Exercise 2.7.13, change *$n - 2$ nonintersecting diagonals* to *$n - 3$ non-intersecting diagonals*.

- Chapter 3

P26: Corollary 3.3.2, change $k < n$ to $k > n$.

P31: Add *for $k \geq 2$* at the end of Exercise 3.6.11.

P32: In Exercise 3.6.20, remove *the* before *statements*.

- Chapter 4

P36: In the proof of Theorem 4.3.1, change *B is $0, 1$ matrix* to *B is a $(0, 1)$ -matrix*.

P37: The statement (3) of Theorem 4.3.2 is not correct when the graph has an odd number of vertices. It should be replaced with *If $|V(X)|$ is even, the characteristic polynomial of X is a polynomial in λ^2 and if $|V(X)|$ is odd, then the characteristic polynomial of X multiplied by λ is a polynomial in λ^2* .

- Chapter 5

P50: In Exercise 5.5.10, the right hand side should be

$$\sum_{i,j} \binom{r}{i} \binom{s}{j} (-1)^{i+j} T(r-i, s-j) (s-j)^i (r-i)^j.$$

- Chapter 6

P55: Add *when $x \leq y$* after $\mu(x, y) = (-1)^{y-x}$. Add *when $A \subset B$* after $\mu(A, B) = (-1)^{|B|-|A|}$.

P56: On line 6, change *Let $G(J)$ be those elements* to *Let $G(J)$ be the number of those elements*.

P69: In Exercise 6.9.3., change $\sum_{n \leq x} F(x/n)$ to $\sum_{1 \leq n \leq x} F(x/n)$ and $\sum_{n \leq x} \mu(n)G(x/n)$ to $\sum_{1 \leq n \leq x} \mu(n)G(x/n)$.

P70: Add *for* $\lambda \geq 0$ at the end of Exercise 6.9.12.

P71: In Exercise 6.9.20, add *the chromatic polynomial of X equals* between *that* and $p_X(\lambda) = \sum_{F \subseteq E(X)} (-1)^{|F|} \lambda^{c(X[F])}$.

- Chapter 7

P72: On line 9, remove *a* between *Here are* and *few examples*.

- Chapter 8

P90: In Theorem 8.3.1, change the necessary and sufficient condition for the existence of a system of common representatives to *for any collection of sets A_i with $i \in I$, there are at least $|I|$ subset B_j that $B_j \cap (\cup_{i \in I} A_i) \neq \emptyset$.*

P90: In the definition of a doubly stochastic matrix, add *with non-negative entries*.

P99: In Exercise 8.8.20, change $\cup_{i \in I} V_i$ to $\text{Span}(\cup_{i \in I} V_i)$.

- Chapter 9

P110: The left hand side of the first displayed identity should be

$$(|z|^2 + |w|^2)(|u|^2 + |v|^2)$$

Two lines below this line, it should be $v = y_3 + iy_4$.

- Chapter 10

P118: On line 5, add *at an interior point* after *so that no two edges intersect*.

P118: On line 9, change *a vertex of the graph* by *an edge of the graph*.

P118: In Theorem 10.1.1, add *finite* before *connected planar graph*.

P120: The statement of Kuratowski's Theorem is obviously incorrect. Change *a graph is planar if and only if it can be edge-contracted to K_5 or $K_{3,3}$* to *a connected graph is planar if and only if it cannot be edge-contracted to K_5 nor to $K_{3,3}$.*

P124: In Heawood's Theorem (Theorem 10.3.2), change $\lceil \frac{7+\sqrt{1+48g}}{2} \rceil$ to $\lfloor \frac{7+\sqrt{1+48g}}{2} \rfloor$.

P124: In the proof of Heawood's Theorem, change $c = \lceil \frac{7+\sqrt{1+48g}}{2} \rceil$ to $c = \frac{7+\sqrt{1+48g}}{2}$.

- Chapter 11

P139: In Exercise 11.4.11, change $k \leq 2n + 1$ to $k \leq 2n - 1$. Also, change $k = 2n + 2$ to $k = 2n$.

- Chapter 12

P143: On line 9 from the bottom of the page, remove the first \leq and replace the second \leq by $=$.

- Hints

P164: In Exercise 6.9.4: change *Use 6.9.1* to *Use 6.9.3*.