Springer: Brooks' Theorem, Errata

- p 70 (Theorem 2.20): Then then graph ... (should be) Then the graph ...
- p 91, line -11: This complete the proof of (c). (should be) This completes the proof of (c).
- p 112,l -7/-5:

  Farrugia [364] proved that for any additive hereditary graph properties $\mathcal{P}$ and $\mathcal{P}'$, recognizing graphs in $\mathcal{P} \circ \mathcal{P}'$ is NP-hard with the only exception of bipartite graphs, that is, the case where $\mathcal{P} = \mathcal{P}' = \mathrm{Forb}[K_2)$.

  Here we should also assume that $\mathcal{P}$ and $\mathcal{P}'$ are both nontrivial.
- p 180, l-8: Hajós sum (should be) Hojós join
- p 225, l 3 (p 531, 532, 604, 615): Köster (should be) Koester
- p 279, l 15/17 Replace the following sentence:

  They proved that the union $\mathcal{EX}_k$ of all these classes is the smallest class of graphs that contains K_k and that is closed with respect to Gallai joins of the form $G \blacktriangledown K_k$ (so $G \in \mathcal{EX}_k$ implies $G \blacktriangledown K_k \in \mathcal{EX}_k$).

  by

  They proved that the union $\mathcal{EX}_k$ of all these classes is the smallest class of graphs that contains K_k and that is closed with respect to Gallai joins (so $G_1, G_2 \in \mathcal{EX}_k$ implies $G_1 \blacktriangledown G_2 \in \mathcal{EX}_k$).
- p 289, l -12/-7: Replace the 6 lines by:

  Now we use that $|L(u)| \geq t$ for all $u \in U$, $|U| \leq d_G(v) \leq \Delta$, $t \geq 2$ and $|T| \geq k/2$. Then we obtain that

$$\begin{aligned} E &\geq |T| \left(\prod_{u \in U} (1 - 1/t)^t \right)^{1/|T|} \geq |T|(1 - 1/t)^{t\Delta/|T|} \\ &\geq |T| 4^{-\Delta/|T|} \geq \tfrac{k}{2} 4^{-2\Delta/k} \geq \frac{k}{2 \cdot 4^{(\log \Delta)/2}} \\ &\geq 2 \frac{\Delta^{1-\log 2}}{\log \Delta} = 2\ell. \end{aligned}$$

  This completes the proof of Theorem 5.46.

- p 344, l 5: Naserass (should be) Naserasr
- p 383, l -18: Then Then $H = K_1 \boxplus H'$ (should be) Then $H = K_1 \boxplus H'$
- p 476, l -13: $GY(4)$ isomorphic (should be) $GY(4)$ is isomorphic
- p 535, l 4: Zu (should be) Zhu
- Reference 280 should be replaced by the following two references:

  DESCARTES, B. (1947/1948). A three-colour problem. *Eureka*, 9:21. (solution in *Eureka*, 10:24.)
  DESCARTES, B. (1954). k-chromatic graphs without triangles. In: Advanced problems and solutions: solution of problem 4526 (P. Ungar). *Amer. Math. Monthly,* 61:352–353.

- Reference 568 should by:

  KEMPE, A.B. (1879). On the geographical problem of the four colours. *Amer. J. Math.*, 2:193– 200.

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