Errata and Hints for "Quantum Walks and Search Algorithms" (2nd edition) by Renato Portugal, Springer, Cham/Switzerland, 2018

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Chapter 3

1. Exercise 3.12 on page 38. Some hints on how to prove the identity

$$\mathrm{e}^{-2\,\mathrm{i}\,\gamma\,t} J_{|n|}\left(2\,\gamma\,t\right) = \mathrm{e}^{\frac{\pi \mathrm{i}}{2}|n|} \sum_{k=|n|}^{\infty} \frac{\left(-\mathrm{i}\gamma t\right)^k}{k!} \binom{2\,k}{k-n}.$$

Chapter 9

1. Exercise 9.11 page 189. The expression

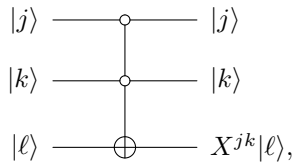
$$S_N \;=\; \sum_{\substack{k,\ell=0 \\ (k,\ell)\neq(0,0)}}^{\sqrt{N}-1} \frac{1}{1-\frac{1}{2}\left(\cos\frac{2\pi k}{\sqrt{N}} - \cos\frac{2\pi \ell}{\sqrt{N}}\right)}$$

must be replaced by

$$S_N \;=\; \sum_{\substack{k,\ell=0 \\ (k,\ell)\neq(0,0)}}^{\sqrt{N}-1} \frac{1}{1-\frac{1}{2}\left(\cos\frac{2\pi k}{\sqrt{N}} + \cos\frac{2\pi \ell}{\sqrt{N}}\right)}$$

Appendix A

1. Page 267. The circuit



must be replaced by