COMP760, SUMMARY OF LECTURE 3.

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- We have $R^{prv}_{1/n}(\mathrm{EQ}) = O(\log n)$ (compare to $D(\mathrm{EQ}) = n + 1$). See [KN97, Example 3.5].
- We have $R^{pub}_{\epsilon}(\mathrm{EQ}) = O(\log 1/\epsilon) = O_{\epsilon}(1)$. See [KN97, Example 3.13].
- The private coin and public coin complexity measures are more or less equivalent:

  Theorem 1 ([New91])**.** *For every f and $\delta, \epsilon > 0$, we have $R^{prv}_{\epsilon+\delta}(f) \leq R^{pub}_{\epsilon}(f) + O(\log n + \log 1/\delta)$.*

  For the *nice* proof see [KN97, Theorem 3.14].

References

[KN97] Eyal Kushilevitz and Noam Nisan, *Communication complexity*, Cambridge University Press, Cambridge, 1997. MR 1426129 (98c:68074)

[New91] Ilan Newman, *Private vs. common random bits in communication complexity*, Inform. Process. Lett. **39** (1991), no. 2, 67–71. MR 1124040 (92f:68069)

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