

General Comments - There needs to be a consistent stylistic choice between referring to a class of algorithms solving a problem as 'an algorithm' or as 'algorithms.' It shifts between paragraphs. I don't have a good recommendation for which is appropriate, since I don't know which is standard in the literature.

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1. In the statement of Theorem 1, I think *connectivity* should be replaced with *connected components* or *finding connected components* since *connectivity* can mean many things in graph theory. It's clear from context what you mean, but I think this phrasing is better.
2. In Theorem 1, in points 2 and 3, there is some amount of abuse of notation. I'm not fully sure whether this is standard in this field, but strictly speaking you're talking about an infinite class of graphs for which the inequality is true, not specifying a graph beforehand. Otherwise, there is always an epsilon satisfying the first inequality, and another satisfying the second.
3. In the statement of Theorem 2, I think *connectivity* should be replaced with *connected components* or *finding connected components* similar to Theorem 1.

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1. In  
*Solution to Connectivity built on the graph exponentiation technique,*  
I think *connectivity* should be replaced with *connected components* or *finding connected components* similar to above.
2. In the statement of theorem 4, I believe  
*given a graph  $G$  of  $n$  vertices and  $m$  edges with probability at least  $1 - 1/10n$ , solves MIS in ...*  
should be  
*given a graph  $G$  of  $n$  vertices and  $m$  edges, solves MIS in ... with probability at least  $1 - 1/10n$ .*

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1. In theorem 5, *npolylogn* is awkwardly spaced, and should either be *n polylog n* or a different mathematical way of expressing this.
2. In problem 3.4's question, bullet points 3 and 4 exceed the right margin. This should be reformatted to avoid that.

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1. In Theorem 6 point 2, the *?* should be deleted.
2. *-polylogn* is awkwardly spaced. It should either be *-polylog n* or a different mathematical way of expressing this.
3. In section 4.1, the sentence

*In the following, we describe how each bit of each machine determined by ?-sum of its received signals.*

is incorrect grammatically, and should specify

*in the following XXX* where the XXXX is replaced by *definition* or something similar. I am not certain of the intent, so I leave it to you to change.

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1. In definition 8 point 1, you should refer to the property either as a statement or as a set, but here you mix them. Also, I think you should use *connectedness* instead of connectivity to refer to whether a graph is connected. This occurs later in this document as well.