

## Physics 140 – Week of August 27

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### Reading

For 8/29 – R&P Ch. 1 and §2.1.

For 8/31 – R&P §2.2:

1. For a given qubit, how do we choose what states to call  $|0\rangle$  and  $|1\rangle$ ? What restrictions are there on our choice?
2. What did you find difficult or confusing about the reading? If nothing was particularly difficult, what was most interesting? Please be as specific as possible.

### Problems

1. R&P 2.1, or write up your solution if we got to it in class.
2. Your main task for Tuesday is to send me an encrypted email, in which you transmit the name of your favorite band. Also I would like to know the favorite band of one of your parents.  
We're going to use an implementation of the RSA protocol for Gmail and Firefox. (You will need a computer with Firefox.) The step-by-step instructions are at <http://www.techrepublic.com/blog/networking/add-encryption-to-gmail-with-greasemonkey/3515>, based on a Greasemonkey script at <http://www.langenhoven.com/code/emailencrypt/gmailencrypt.php>. (Where he says "right click on the script" I had to center-click to get it to work.) Before you get started, read [http://en.wikipedia.org/wiki/RSA\\_\(algorithm\)](http://en.wikipedia.org/wiki/RSA_(algorithm)) to get a feel for what RSA is about, going only as far as you want into the technical details. My public key is `pub:15534091:17`.

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Reading responses are due in my email inbox ([ekb2@stmarys-ca.edu](mailto:ekb2@stmarys-ca.edu)) at 9:00 p.m. the night before class. The week, because of Labor Day, the problem set is due Tuesday, September 4, at 4:00 p.m. Problem one goes in the manila envelope outside my office, problem two goes to my email inbox.