

Physics 140 – Week of September 10

Reading

For 9/12 – R&P §2.4.

1. When Alice and Bob choose different bases for their measurements, the chance that their bits match is only 50%. How do R&P come up with that number, 50%?
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.

For 9/14 – R&P §2.5.

1. What is a phase? What is the difference between a *global* and a *relative* phase?
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.

For 9/17 – R&P §3.1.

1. This is a tough section. The notation gets complicated and the important concepts are hard to dig out of the math. Try to think about the way the inner product works for the tensor product (and remember that quantum probabilities are given by the absolute value squared of the inner product). Can you see why this is the right way to combine probabilities for, say, a 2-qubit quantum system?
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

- R&P 2.2, 2.5, 2.8, 2.9, 2.10.

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As a reminder, reading responses are due in my email inbox (ekb2@stmarys-ca.edu) at 9:00 p.m. the night before class. Problem sets are due Monday at 4:00 p.m., in the manila envelope outside my office.