

# Quantum Physics, Preparation for Tuesday, Feb. 13

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## Study Q7 from *Six Ideas*

We are in the heart of quantum mechanics of two-state systems.

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## Presentations

- (1) Ren and Hexi, Q7D.3, p. 118, wherein complex superpositions are forced upon us!
  - (2) Rebecca and Emma, Q7R.3, p. 119, a cascade of three Stern-Gerlach apparatuses (see also Q7M.3, p. 118 as a warmup)!
  - (3) Miles and Trey, Sections Q8.4 and Q8.5, pp. 128-131, Schrödinger's cat and the multiverse interpretation of quantum mechanics!
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## For Problem Set 8

The following 5 problems are all on p. 117.

### Basic and Intermediate Problems

1. Q7B.1, p. 117, normalizing  $c_+$  and  $c_-$
2. Q7B.4, p. 117, although (a) is easy, note that in (b) Moore has asked for the probability of finding  $S_x = -\frac{1}{2} \hbar$ , and this is not at all the same as finding the probability that  $S_z = -\frac{1}{2} \hbar$

### Challenging Multi-Part Problems

3. Q7B.5, two Stern-Gerlach apparatuses
4. Q7B.8, three Stern-Gerlach apparatuses
5. Q7M.2, three Stern-Gerlach apparatuses, builds on Q7B.8, and prepares you for Rebecca and Emma's presentation