1. What is the $k-$step ahead forecast of the conditional variance in a GARCH(1,1) model. Prove that this is correct.

2. What is meant by *stochastic singularity* in the context of testing arbitrage models? How has this been addressed in the empirical literature on testing option pricing models?

3. Describe the battery of tests that Lamoureux and Lastrapes (*RFS* 1993) use to test option pricing models.

   (a) Be clear as to what model(s) they test.

   (b) What technical issues have to be addressed in assessing the validity of their tests?

   (c) What are their results and how do they interpret them?

4. Explain the relationship between the second derivative of the option price with respect to its strike price and the equivalent martingale measure density of the underlying asset.

5. Following up on the preceding question, how has this result been used empirically, and what have we learned from these studies?

6. Describe Longstaff's (*RFS* 1995) test of option pricing models. Include a careful discussion of the test design and a description of Longstaff's findings.

7. Describe Rubinstein's (*JF* 1994) binomial trees. How do Jackwerth and Rubinstein (*JF* 1996) use this to test option pricing models? What do Jackwerth and Rubinstein find?

8. Provide a summary of the empirical tests conducted by Buraschi and Jackwerth (*RFS* 2001). What do they conclude from their empirical analysis?