Tentin päivämäärä / Date of exam: October 17, 2013
Opintojakson koodi, nimi ja tentin numero / The code and the name of the course and number of the exam: **721383S, Asset Pricing 3/3**
Tentaattori(t)/ Examiner(s): Hannu Kahra
Sallitut apuvälineet / The devices allowed in the exam: ☐X Laskin (ei graafinen/ohjelmoitava)/Calculator (not graphic, programmable) ☐X Sanakirja/Dictionary ☐X Muu materiaali, tarkennettu alla/Other material, specified below **Kaikki kirjallinen materiaali (kirja/kirjoja, artikkeleita, luentomateriaalia, jne.)**
Tenttiin vastaaminen / Please answer the questions ☐X suomeksi/ in Finnish ☐X englanniksi/ in English
Kysymyspaperi on palautettava / Paper with exam questions must be returned: ☐ Kyllä/Yes ☐X Ei/No

Keep in the facts and try to avoid story-telling. Optimize your time. Short answers and use your own words!

1. Derive and interpret the basic pricing equation (the CCAPM) (6 points).
2. Show that the CAPM is a special case of the CCAPM (6 points).
3. You estimate the CAPM model for a set of 100 stocks and when testing, you find that in the sample the alphas are statistically different from zero. Is this evidence against market efficiency? Explain (6 points).
4. You estimate an APT model for stocks using 100 risk factors in the model (assuming you don't have the small sample problem). You find that 5 risk factors are *statistically* significant. Have you discovered new risk factors that are also *economically* significant? Draw your conclusions. How do you proceed with testing (6 points)?
5. Fisher Black's version of the CAPM. How is it connected to Roll's critique (6 points)?
6. 2013 Nobel Price in Econonomics:
    a. Who are the Nobel Price Winners (3 points)?
    b. What is the subject matter of their research (3 points)?