

**Problem set I W DUE IN CLASS WEDNESDAY OCTOBER 15**

---

Ground rules: The “recommended problems” from the book (RWJ or BKM) and listed in the lecture notes are for practice, and are not to be turned in. The questions in Problem Sets I, II, III and IV are at or sometimes above the level of the book problems. These problems are to be turned in. Although you may discuss these problems with others, you should calculate everything yourself (just to make sure that you can get your calculator to give the same answers that everyone else is getting). Your solutions must be written up by yourself: you must turn in the original. If you won't be in class on the day the problem set is due, you can fax me a pdf, and turn in the original at the next meeting.

---

1. Ten years ago, an investor put \$10,000 into an investment paying 7%. Today, she plans to roll over the investment for eight more years, but the available interest rate is 5%. How much will she have at the end of eight years?
2. Multicorp is trying to finance an equipment sale. The cash price of the machine (today) is \$1,000,000. Their customer, Newey, has asked for financing in the form of a ten-year loan (with equal payments at the end of each year) at 8.5%.
  - a. What is the amount of the payment on the loan?
  - b. What are the first four payments if the loan is structured as a constant amortization loan?
3. I can buy red ABC commercial paper with a nine-month maturity for 97.0 (percent of par). [For example, if the face (par) value is \$100, I pay \$97, and at maturity I receive \$100.] What is the percent return over the holding period? What are the APR and EAR of the investment?
4. Arthur bought 1900 shares of SPQR at a price of \$140. It was a margin trade: with an initial margin of 50%, he put up the minimum amount of cash.
  - a. If the maintenance margin is 30%, verify that Arthur will get a margin call when the stock price drops below \$100.
  - b. Arthur has no cash to meet a margin call. The broker knows this and will close out (sell) Arthur's entire position immediately when the maintenance margin is violated. The bid side of the limit order book in SPQR looks like this:

Bid	Shares
\$100.00	100
\$99.50	300
\$99.20	800
\$89.20	700
\$88.00	300
\$86.00	100

A market sell order arrives for 200 shares. What is the new bid after this order executes? What is bid after Arthur's broker sells his position using market orders?