

**Summer 2015: Midterm B**

Name \_\_\_\_\_

Note: Problem 5 is on the second page.

**Short Answer (15 points each)**

1. What is one of the disadvantages of a sole proprietorship compared to other types of firms?
2. You have calculated a firm's net debt as equaling \$100 million. What information did you need to calculate this number?
3. Suppose you submit a market order to sell 100 shares of GE stock. The bid price is \$26.85 and the ask price is \$26.87. There are hundreds of shares available at both prices. Which price will you end up paying for the stock?
4. Assume that a bond maturing 10 years from today has a coupon rate of 8% and a yield to maturity of 6%. Should the bond sell at a premium or a discount from its \$1000 par value?
5. What is one pitfall of the internal rate of return rule?

**Problems (75 points each)**

1. Assume that Quick can be bought or sold today for \$9 and pays \$10 a year from today but nothing two years from today. Slow can be bought or sold today for \$35 today and pays nothing a year from today but \$40 two years from today. Spread can be bought or sold for \$65 today and pays \$30 a year from today and \$40 two years from today. Set up a table that shows the trades you would make today to earn an arbitrage profit and which shows that no net cash flows occur either a year from today or two years from today. Note: Calculations required.
2. You have just deposited \$1,000 into an account with an APR of 6% per year. The interest on the account compounds quarterly. Two years and six months from today, you plan to make the first of a series of semiannual withdrawals from the account. After your initial withdrawal, you plan for your semiannual withdrawals to grow by 2% each through the final withdrawal five years from today. How large can you make your first withdrawal? Note: Only required to set everything up.
3. Grayson Inc. is considering investing \$200,000 in a new project that will generate a net cash flow of \$75,000 per year. The first cash flow will occur one year from today and the final cash flow will occur five years from today. What is the internal rate of return on this project? Note: Only required to set everything up.
4. Assume a bond matures five years from today for \$1000 and that the bond has a 9% coupon rate and semiannual coupons. Assume also that the bond's yield to maturity equals 5% APR.
  - a. What is the fair price of this bond today? Note: Only required to set everything up.
  - b. Assume that five months from today the bond happens to trade at exactly the price you calculated in part a. What will be the clean price of this bond? Note: Only required to set everything up.

5. Set up the calculations need to determine unlevered net income and free cash flow for the new facility both today and five years from today. Note: Only required to set everything up.

Honda is considering building a new manufacturing facility on land it owns in South Austin. The facility would cost \$250 million to build (the cost would be incurred today) and would fall into the seven-year MACRS class. The land was purchased three years ago for \$2 million and Honda estimates it could sell the land today for \$3 million (after taxes) if it does not build the plant. An environmental impact study shows no adverse effect on wildlife. The \$500,000 cost of this completed environmental impact study is due today. Initial sales from the factory will occur one year from today and will equal \$175 million. After the first year, sales would rise by 10% per year for the first five years. Fixed selling and administrative costs will equal \$25 million per year and variable costs (including cost of goods sold) will equal 55% of sales. Honda's marginal tax rate equals 35%. Finally, the net working capital associated with the new factory today (year 0) and for the following five years are listed below.

| Year          | 0    | 1     | 2     | 3     | 4     | 5     |
|---------------|------|-------|-------|-------|-------|-------|
| Cash          | 0.00 | 10.32 | 10.56 | 10.64 | 10.48 | 10.88 |
| Acct. Receive | 0.00 | 9.60  | 9.84  | 10.56 | 11.44 | 12.08 |
| Inventory     | 0.00 | 64.24 | 66.56 | 65.60 | 69.76 | 74.48 |
| Acct. Payable | 0.00 | 53.52 | 54.56 | 56.16 | 60.80 | 59.92 |