

Midterm Exam #2  
Finance 325  
October 28, 2010

Name: \_\_\_\_\_

Exam Instructions:

- This exam should have 6 pages (including this one) and 6 questions. The point value is given for each problem. The entire exam is worth 100 points.
- You may use a calculator and the provided formula sheet on this exam.
- You must show your work in order to receive credit for your answers. Partial credit will be given for partially correct answers.
- If a question asks “Why/Explain”, you should give an explanation that would convince a skeptic.
- You may use the back of a page if you need additional space to write an answer.

Suggestions:

- Use your time wisely. Move on to another problem if you feel like you’re stuck.
- You may ask me questions if you are unclear about a problem. I may be able to clarify the problem for you.

**GOOD LUCK!!**



3. Ice cream is your favorite food, so you are looking to get into the ice cream business for yourself. You have found a Baskin-Robbins franchise for sale, and are considering whether this would be a good investment. The owners are asking for \$1,000,000 for their store. For an additional \$500,000 (so the final purchase price would be \$1.5 million), the owners would be willing to buy the store back from you for \$650,000 in one year if you want to leave the business.

You think there is a 60% chance that the business will do great, and that the store will generate annual cash flows of \$240,000 into perpetuity (starting next year). You are aware, however, that this business is risky, and there remains a 40% chance that the store will do poorly and annual CFs will only be \$110,000 per year into perpetuity.

What should you do regarding this opportunity? Your discount rate is 18.9%. (18 pts)

4. Your company, PBR Inc. is considering the launch of a new product. It estimates that it will sell 800,000 units in year 1, in the second year: 1 million units, and in the third year: 500,000 units. PBR will sell the product for \$3 per unit and variable non-labor costs will be \$1 per unit. PBR will close down production after year 3. New equipment costing \$1 million will be required. The equipment will be depreciated to zero on a straight-line basis over 10 years. PBR thinks it can sell the equipment in year 3 for \$400,000. Production will take place in part of PBR's primary plant. PBR has no other use for the space being used for production. PBR will move experienced production workers to the new line. The total salary of these experienced workers is \$500,000 per year. However, replacements will need to be hired to replace the workers being moved to the new line. The total cost of the new replacement workers will be \$400,000 per year. PBR's current level of working capital at its primary production facility is \$300,000. The new product will require the working capital to increase to a level of \$380,000 immediately, then to \$400,000 in year 1, in year 2 the level will be \$350,000, and finally in year 3 the level will return to \$300,000. PBR's tax rate is 35%. The discount rate for this project is 10%. Should PBR launch this new product? (20 pts)

5. Johnson Protective Services is considering a facilities upgrade. The investment has an expected life of 5 years. Management estimates that if the project is undertaken, the company's annual after-tax cash flows over the next 5 years will be only \$12,000 per year. If they do not upgrade the facilities, they expect annual after-tax cash flows will be *negative* \$400,000 per year. Assuming that the company intends to stay in business, how much can the company justify paying for the upgrade, given a discount rate of 15% APR, compounded quarterly? (14 pts)

6. Acme Industries, Inc. looks at the following decision criteria when evaluating projects:

1. NPV must be greater than zero.
2. IRR must be greater than the cost of capital.
3. Payback period must be less than 6 years.
4. The value of the firm must increase by at least \$500,000 as a result of the investment.

In order to undertake an investment, at least three of the four criteria above must be met (in other words, one of the criteria may say “no”, but if the other 3 say “yes”, then the investment is undertaken).

Critically evaluate the above policy (i.e. discuss its pros and cons). If the policy is a good one, explain why. If not, explain why not and suggest an alternative policy. (18 pts)