

## Session 15A: Post Class tests

1. When you capitalize R&D, you affect both after-tax operating income and capital invested. In some cases, the return on invested capital will go up, in some, it will be unaffected and in some, it will go down. In which of the following companies will the change in return on capital from capitalizing R&D be greatest?
  - a. Young companies with long-life R&D
  - b. Mature companies with long-life R&D
  - c. Young companies with short-life R&D
  - d. Mature companies with short-life R&D
2. Lycra Motors is a small automobile firm. The firm is a mature firm, with \$ 2 billion in revenues growing 2% a year in perpetuity; it currently has capital invested of \$ 1 billion. However, it reported an operating loss of \$50 million last year, primarily because the economy was in a recession. If the average after-tax operating margin for the company across the economic life cycle is 5% and the cost of capital for the firm is 8%, what is the value of Lycra Motors?
  - a. \$ 0
  - b. \$ 1 billion
  - c. \$1.33 billion
  - d. \$1.67 billion
  - e. \$ 2 billion
3. Selma Oil is an oil services company that reported after-tax operating profits last year of \$150 million on revenues of \$ 1 billion. However, the firm benefited from high oil prices (averaging \$100/barrel) during the course of the year. Oil prices have now dropped to \$ 60/barrel and your assessment of Selma Oil's history suggests that every \$ 1/barrel drop in the stock price costs them \$1.25 million in after-tax operating profits. If the firm is in stable growth, with production growing 2% a year in perpetuity and the business is a competitive one (where firms earn their cost of capital of 8% over time), estimate the value of Selma Oil today.
  - a. \$1,250 million
  - b. \$1,667 million
  - c. \$1,875 million
  - d. \$2,500 million
  - e. None of the above
4. You have valued two companies, 3M and Facebook. With 3M, you have assessed a value per share of \$120 and the stock is trading at \$100. With Facebook, you have assessed a value of \$37.50 and the stock is trading at \$25. If you use a 40% margin of safety on your investments, which of these stocks would you buy?
  - a. 3M
  - b. Facebook
  - c. Neither
  - d. Both

What are some of the reasons that this may not be the right way to choose between the two investments?