Session 16A: Post class test solutions

1. **c. Debt ratios should go down over time**. The lower tax rate on dividends effectively lowers the cost of equity. Since the after-tax cost of debt does not change, this will make debt a less attractive choice to all companies and even more so for mature companies that can afford to pay high dividends.
2. **b. $176.64 million**. The interest tax savings each year can be computed by multiplying the interest expense by the marginal tax rate:

   Interest tax savings = 60*.4 = $24 million

   Taking the present value of these savings over 10 years at the pre-tax cost of debt (assumed to measure the risk in the tax savings as well), you get:

   PV of savings = $24 m (PV of annuity, 10 years, 6%) = $176.64 m

3. **d. Invest less in bad projects after the borrowing.** The idea behind using debt as a disciplinary mechanism is more to prevent taking bad projects than to induce taking good projects.
   In fact, borrowing more money may sometimes cause companies to invest less in good projects (making choice b a viable one) especially if these good projects are in risky businesses.
4. **c. Debt ratio should go down.** As competition heats up, the profits of the hitherto monopoly company will become more volatile. In expected bankruptcy terms, the probability of default has gone up at every level of debt making the expected costs of bankruptcy higher.
5. **d. All of the above.** When agency costs go up, it is the borrower who bears the brunt of the cost and it takes all forms. Lenders will lend less money, charge higher interest rates and write in more covenants, if they are concerned about where their money is going.