

## Session 12B: Post class test solutions

1. **d. 4% in perpetuity.** Using a growth rate that exceeds the risk free rate is dangerous, since the risk free rate operates as a proxy for nominal growth in the economy.
2. **c. \$642.86 million.** To compute the terminal value after year, you first have to estimate a reinvestment rate:
  - Reinvestment rate =  $3\%/12\% = 25\%$
  - FCFF in year 6 =  $60 (1-.25) / (.10-.03) = \$642.86$  million
3. **a. \$257.58 million.** The first step is to estimate the terminal value at the end of year 10
  - Reinvestment Rate =  $g / \text{ROC} = 3\%/10\% = 30\%$
  - Terminal value =  $80 (1-.30) / (.10-.03) = \$800$  million
  - PV of terminal value =  $\$800 / 1.12^{10} = \$257.58$  million
4. **b. False.** The terminal value is determined in large part by your assumptions about growth during the high growth period. The cash flow you have in your terminal value equation will be much higher, if you use higher growth during the growth period and thus the terminal value will be significantly impacted by what you assume will happen during high growth.
5. **b. \$1778.51 million.** To get the terminal value, you have to first estimate the earnings in year 4, followed by the payout ratio in year 4:
  - Expected growth rate for next 3 years =  $.6 * .15 = .09$  or 9%
  - Net Income in year 4 =  $100 (1.09^3)(1.03) = \$133.39$  million
  - Payout ratio in year 4 =  $1 - g / \text{ROE} = 3\%/15\% = 80\%$
  - Terminal value in year 3 =  $133.39 (1-.20) / (.09-.03) = \$1778.51$  m