1. James Sporting Goods is a small, publicly traded company that has 10 million shares outstanding, trading at $2/share and $80 million in debt (book and market) outstanding. The current (levered) beta for the company is 2.72 and the current pre-tax cost of debt is 9%. The riskfree rate is 3%, the equity risk premium is 6% and the marginal tax rate is 40%.
   a. Estimate the current cost of capital for the firm. (1 point)
b. Now assume that you believe reducing your debt to capital ratio to 30% is the right choice to make and that doing so will reduce your default spread by half. Estimate the cost of capital at a 30% debt ratio. (3 points)
2. Goodell Media is a publicly traded firm with 80 million shares outstanding, trading at $10/share, and $200 million in debt outstanding. Goodell is considering borrowing $440 million and buying back shares at $11/share; the cost of capital will drop from 8.25% to 8% as a consequence. Assuming no growth in perpetuity, estimate the value per share for the remaining shares, after the buyback. (3 points)
3. Ulysses Tel is a telecom company with 50 million shares, trading at $40/share and $500 million in debt outstanding; half the debt is 3-year zero coupon debt and the rest is a balloon payment bank loan, with principal and interest due in one year. You are considering borrowing money and acquiring Sylvan Films, a media business, for $1.5 billion and you have run regressions of firm value changes against interest changes for both firms:

\[ \Delta \text{Firm Value}_{\text{Ulysses}} = 0.50 - 8.00 \Delta \text{T.Bond Rate} \]
\[ \Delta \text{Firm Value}_{\text{Sylvan}} = 0.50 - 2.00 \Delta \text{T.Bond Rate} \]

If you want the duration of your total debt to be matched up to the duration of your assets, post-acquisition, estimate the duration of the debt you would use in funding the acquisition. (3 points)