Quiz 2: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam. All of the questions relate to the same project.

1. Solitaire Books is a publishing company that is considering expanding into educational services. Solitaire Books has a levered beta of 0.80 and a debt to capital ratio (D/(D+E)) of 20%. The unlevered beta for educational service companies is 1.10 and Solitaire plans to use its existing debt ratio in funding the business. Solitaire’s effective tax rate is 30% but the marginal tax rate is 40%. Soliatire is rated A, and the default spread for A rated firms is 2%. Estimate the cost of capital you would use in doing a project analysis of the educational service investment. (You can assume that the riskfree rate is 4% and the market risk premium is 4.82%) (2 points)
2. Now assume that you expect the educational service to generate revenues of $10 million
   each year for the next 3 years and earnings before interest, taxes, depreciation and
   allocated G&A to be 30% of revenues each year. The initial investment in the business is
   $7.5 million and it will be depreciated straight line to a salvage value of $3 million at the
   end of the third year. You are provided with the following additional information:

   i. The company existing annual G&A expense of $1.0 million is expected to increase
      to an annual expense of $1.5 million for the next 3 years as a result of the investment.
      The company plans to allocate half of the total G&A expense to the project.

   ii. The project will use excess space in a building already owned by the firm for
       classrooms. While the firm has no plans to sell or rent the building, the cleaning
       expenses are expected to rise from $100,000 a year to $250,000 a year as a result.

   iii. The working capital is expected to be 10% of revenues and the investment has to be
        made at the beginning of the year in which the revenues are generated.

   iv. The effective tax rate is 30% but the marginal tax rate is 40%.

   Estimate the annual incremental after-tax cash flow from this project from operations for
   the next 3 years. (4 points)
3. At the end of year 3, the project will be ended and you will sell the assets for book value. Using the cost of capital from problem 1 and your estimates of cashflows from problem 2, estimate the net present value of this project. (2 points)
4. Estimate the net present value if instead of ending the project in year 3, you expected it to continue in perpetuity. (Make reasonable assumptions about capital maintenance in this scenario) (2 points)