Answer all of the following questions. Explain your answer briefly and clearly, showing any necessary calculations. Your answer should be submitted in an Excel file.

1. (9) The local public library is considering holding a picnic as a fundraiser. They plan to charge $30 per ticket. They can rent a facility at a state park for $400. The food would be catered by a local caterer at a cost of $12 per meal, plus $150 for setting up their equipment. A band would be hired to play for $300 plus 10% of the “gate” (gross ticket sales). The Society would like to net at least $4,000 from the event. How many tickets must be sold for them to achieve their goal? [Note: you cannot sell a fraction of a ticket!]
2. (6) Westminster Company has had the following experience over the past five quarters:

Units produced Electricity cost ($)

27,000 101,000

32,000 120,000

31,000 116,000

20,000 84,000

22,000 90,000

1. Using the high-low method, determine an equation for electricity cost (Y) as a function of units produced (X). Assume a linear function.
2. Using your equation, forecast electricity cost at a volume of 30,000 units produced.
3. (13) Broomfield Company budgeted $9,000,000 of manufacturing overhead for the current year, and 72,000 hours of direct labor (cost of $65/hour). Production of Product X (100,000 units) consumed $500,000 of direct materials, and 9,000 direct labor hours.
4. If overhead is allocated on the basis of direct labor hours, compute the unit cost of Product X.
5. Assume instead that Broomfield uses an ABC system, with three cost drivers: machine hours, materials handling, and setups. Of the total overhead cost, 60% is in the machine hour pool (40,000 budgeted hours), 25% is in the materials pool (allocated based on $2,500,000 of total materials budgeted to be used), and 15% in the setup pool (100 budgeted setups). In addition to the materials and labor listed above, Product X used 6,000 machine hours and 9 setups. Compute the unit cost of Product X under the ABC system.
6. Comment briefly on the cause(s) of any significant difference between your answers to part a and part b.
7. (7) Thornton Division of Brighton Company has operating income of $400,000. Operating assets were $2,000,000 at the beginning of the year, and had increased by 10% at the end of the year. Brighton Company has a target ROI of 14%, and a weighted-average cost of capital of 9%. Compute Thornton’s:  
   a) ROI

b) Residual income

c) EVA