Business Modelling

Choose two of the following four scenarios, and write a 4-page essay2 pages for each scenario. Essay must be typed. Font size: 12ptDouble spaced with 1” margins Students MUST provide mathematical models in detail for each scenario to receive full credit and if necessary, you must provide the excel output using Excel Solver or Data Analysis in scenario 2, 3 or 4.Make sure biblical integration should be provided as well, meaning you should provide a biblical perspective in your essay. The final case study project is due by Thursday (Day 4), and late submissions will not be accepted. Scenario 1Suppose California Baptist University (CBU) is considering creating a brand new major, Medical Science, in 2016. If CBU sticks with its current curriculum and creates no further majors, then the annual revenue will be tuition ($11.5 million), donation ($4.4 million), and research grants ($2.5 million). At the same time, CBU incurs costs such as employee salaries ($6 million), rent ($5 million), and utilities ($2.2 million) to maintain its business annually. If CBU decides to create new majors, then there are three possibilities. First, if medical research proves to be successful, and new faculty members in medical science, receive funding more actively from the state and federal government, then annual research grants are expected to increase from $2.5 to $8 million. Also, medical research alumni are likely to donate funds to CBU in the future, which also is expected to increase the amount of donation from $4.4 to $6 million, so the total revenue would increase by $7.1 million. On the other hands, the university should hire more staff/faculties in those areas, which would increase employee salaries from $6 to $8 million, while rent and utilities stay the same as under “offering no new major” option. However, business analysts expect this probability to be 35%. Second, there is also a 40% chance that faculties in medical science have a hard time receiving federal research funds due to the recession, in which case, the research grants decreases from $2.5 to $0.7 million, while revenues from tuition and donation stay the same as under “offering no new major” option. In this scenario, CBU will still have to pay employment salary ($8 million) and rent and utilities stay the same as under “offering no new major” option. Finally, uncertain economic or regional factors may lead to a huge drop in enrollment, decreasing tuition revenue. The boom in the housing market and recent drought increases rent and utilities dramatically. In other words, there is a 25% chance that CBU is suffering a loss of $3.5 million (net profits), if it chooses to offer a new major. Question: Make a recommendation regarding whether CBU should offer a new major or stick to its current curriculum, using a decision tree (Hint: You MUST calculate the expected net profit of the option “offering a new major” and compare it to the net profit of the option of “offering no new major”)Please refer to the attached document #1 Guideline.ppsm for scenario 1.Scenario 2California Pacific is a lumber company that has three sources of wood and five markets to be supplied. The annual availability of wood at sources 1, 2, and 3 is 15, 20, and 15 million board feet, respectively. The amount that can be sold annually at markets 1, 2, 3, and 4 and 5 is 11, 12, 9, 10 and 8 million board feet, respectively. In the past, the company has shipped the wood by train. However, because shipping costs have been increasing, the alternative of using ships to make some of the deliveries is being investigated. This alternative would require the company to invest in some ships. Except for these investment costs, the shipping costs in thousands of dollars per million board feet by rail and by water (when feasible) would be the following for each route.