

### Assignment Instructions

Follow instructions carefully. Otherwise your grade will be affected

You can discuss the questions with colleagues. But you are **not allowed** to share your work.

Alike assignments will earn a grade of 0 first time.

Alike assignments will lead to an F in the course second time.

Previous semester assignments will earn a grade of 0 first time.

Previous semester assignments will lead to an F in the course second time.

#### Sources and Plagiarism

Cite your sources (i.e., websites, books, magazines, etc.)

Answers without sources will not earn grade.

Plagiarism: To use the same words as your source.

Plagiarism leads to a 0 in the assignment. No matter if it is only a sentence.

Be organized and professional.

Consistent formatting is expected (Line spacing, margins, fonts, numbering, etc.)

Poorly presented assignments will lose up to 20% because of presentation.

Answers without proper support will not earn any grade.

Include calculations when necessary.

Refer to appendixes when explaining your answer.

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#### Question/answer examples

**Example 1: How many Daejo leaders are located in the state of Texas?**

**Unacceptable answer:** 9.

**Acceptable answer:** Currently there are 9 dealers in the state of Texas.

**Note:** Answers need to be presented in a professional and nice fashion.

**Example 2: One of the best sellers at a paint store is an Iron-coat paint. The annual demand is forecasted as 10,000 gallons. The carrying cost is \$0.75 per gallon. The ordering cost is \$150 per order. How much paint should be ordered each time?**

**Unacceptable answer:** 2000.

**Acceptable answer:** The paint store should order 2,000 gallons each time. Calculations below show how the answer was obtained:

$$Q = \sqrt{\frac{2C_oD}{C_c}} = \sqrt{\frac{2 * 150 * 10,000}{0.75}} = 2,000$$

**Note:** Answer is professionally presented. Calculation details are shown using Microsoft equation editor.

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**Assignment 2**

Answer all questions

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1. [15 points] Aditya Sharma established *Curry Pot*, an authentic Indian restaurant in Middlesburg 5 years ago. It features authentic Indian recipes, cooked by experienced Indian chefs. The facility is homey, with relaxed and friendly service. Business has been good during the past 2 years, both for lunch and dinner. Customers normally wait about 15 minutes to be served, although complaints about service delays have increased recently. Sharma is currently considering whether to expand the current facility or open a similar restaurant in neighboring Centerville, which has been growing rapidly.
  - a. What types of strategic plans must Sharma make?
  - b. What environmental forces could be at work in Middlesburg and Centerville that Sharma should consider?
  - c. What are the possible distinctive competencies of *Curry Pot*?
2. [15 points] You are designing a grocery delivery business. Via the internet, your company will offer fresh and/or frozen foods in a large metropolitan area and then deliver them within a customer-specified window of time. You plan to partner with two major food stores in the area. What should be your competitive priorities and what capabilities do you want to develop in your core and support processes?
3. [10 points] Briefly explain three situations you used *search*, *experience*, and *credence* attributes to evaluate the good or service.
4. [10 points] Select a business with which you are familiar and identify examples of order qualifiers and winners.
5. [10 points] Suds and Duds Laundry washed and pressed the following numbers of dress shirts per week.

Worker	Total hours	Shirts
Sud	24	68
Jud	45	131

Calculate labor productivity ratio per each worker. Who is more productive?

6. [10 points] A fast-food restaurant has a drive-through window and during peak lunch times can handle a maximum of 50 cars per hour with one person taking orders, assembling them, and acting as cashier. The average sale per order is \$9.00. A proposal has been made to add two workers and divide the tasks among the three. One will take orders, the second will assemble them, and the third will act as cashier. With this system it is estimated that 70 cars per hour can be serviced. Use productivity arguments to recommend whether or not to change the current system.

**MGMT 3106: Management Science and Operations Management**

7. Customers call a call center to make room reservations for a small chain of 42 motels located throughout the southwestern part of the United States. Business analytics is used to determine how and if the following performance metrics are related: time by quarter, average time on hold (seconds) before a customer reaches a company customer service representative, percent of time the customer inquiry is solved the first time (called first pass quality) and customer satisfaction with the overall call center experience.

Quarter	Average Hold Time (s)	Percent Solved First Time	Overall Customer Satisfaction
Q1	22	82%	96%
Q2	34	80%	92%
Q3	44	88%	82%
Q5	67	85%	84%
Q6	38	85%	90%
Q7	70	76%	80%
Q8	86	73%	81%

- a) [10 points] Develop a graphical interlinking model by constructing scatter charts showing the relationships between each pair of variables. (i.e. Average hold time vs. Percent solved first time, Average hold time vs. Overall customer satisfaction, Percent solved first time vs. Overall customer satisfaction).
- b) [10 points] Can you identify any relationships from the scatter charts? (hint: add a trendline) Briefly explain the relationships (if any) between the variables.
8. [10 points] What is the average value of a loyal customer (VLC) in a target market segment if the average purchase price is \$75 per visit, the frequency of repurchase is six times per year, the contribution margin is 10 percent, and the average customer defection rate is 25 percent? [10 points]