**ANLT-600: Practice Test for quiz 2**

Cost Benefit Analysis

1. Fred runs a designer candle-making business out of his basement. He sells the candles for $15 each, and every candle costs him $6 to manufacture. If his fixed costs are $2,300 per month,
2. what is his projected net income or loss next month, for which he forecasts sales of 225 units?
3. At least how many candles must he sell that would generate net income $0 next month?
4. At least how many candles must he sell that would generate net income $4900 next month?
5. A college print shop leases an industrial Xerox photo copier for $1,500 per month plus 1.5¢ for every page. Additional printing costs are estimated at 2¢ per page, which covers toner, paper, labour, and all other incurred costs. If copies are made for students at 10¢ each, determine the following:
6. How does net income change with every 100 copies sold?
7. What is the monthly net income if, on average, the shop makes 25,000 copies for students each month?
8. Use the following information for the given questions:

S = $100 UVC = $60 TFC = $250,000

1. Calculate the current break-even point in both units and dollars.
2. A production manager is trying to control costs but is faced with the following trade-offs under two different situations:

a. Total fixed costs are reduced by 15%, but unit variable costs will rise by 5%.

b. Unit variable costs are reduced by 10%, but fixed costs will rise by 5%

Based strictly on break-even calculations, which course of action would you recommend she pursue?

Case study

1. In the commercial section of the newspaper, you come across an ad for a pizza delivery business for sale. Upon inquiry, you discover that the owner, who wants to sell the business and then retire, has **four salaried employees** and owns **two delivery vehicles**. He invites you to look through his books, where you acquire the following information:

A picture containing table

Description automatically generated

Assume that this is all the key information. You need to understand and analyze (per month) this business and therefore want to determine: **Total variable cost, total fixed cost, unit variable cost, monthly net income, unit contribution margin per pizza, contribution rates, and Break-even point in units.**

1. Use the given information to solve following questions:

, , , and

1. Calculate total revenue and net income.
2. Due to economic pressures, fixed costs rise by and variable cost by 4%. At the same level of output, by what percentage must the selling price rise to maintain the same level of net income achieved in (a)?
3. Determine a new value for net income if the selling price is lowered by during a sale, resulting in more volume.
4. What is the break-even point in dollars if fixed costs are lowered by , total variable costs rise by, the price is lowered by , and the level of output rises ?

Time series Data

1. Use multiplicative decomposition method to forecast the daily sales for next week. To begin with, complete the following steps:
2. Insert a line chart with markers to see if there are seasonality and trend.
3. Calculate the moving Average (MA), for example, we will choose moving average 4 data if it shows a quarterly seasonality.
4. Calculate the centered moving average (CMA) if necessary.
5. Calculate seasonal component.
6. De-seasonalize data.
7. Calculate trend component.
8. Make forecast.
9. Add predicted data to the graph.

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| Sales (1000s) | Mon | Tue | Wed | Thurs | Fri | Sat | Sun |
| Week-1 | 266.00 | 145.90 | 183.10 | 217.30 | 180.30 | 168.50 | 231.80 |
| Week-2 | 294.30 | 179.50 | 210.10 | 253.30 | 211.40 | 197.30 | 262.00 |
| Week-3 | 329.70 | 214.40 | 245.90 | 289.30 | 241.30 | 217.40 | 295.50 |

1. The following data is the production of a commodity for the years 2020, 2021 and 2022.
2. Use the method of yearly averages to find the monthly seasonal indices.
3. Forecast for each month of the year 2023 if total commodity forecast is 240 for 2023.
4. Using line chart, present the comparison between actual and forecast data.

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| Year/Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 2020 | 15 | 18 | 17 | 19 | 16 | 20 | 21 | 18 | 17 | 15 | 14 | 18 |
| 2021 | 20 | 18 | 16 | 13 | 12 | 15 | 22 | 16 | 18 | 20 | 17 | 15 |
| 2022 | 18 | 25 | 21 | 11 | 14 | 16 | 19 | 20 | 17 | 16 | 18 | 20 |