Unit 8 Assignment: Break–even Price and Shut–down Price

**Name:**

**Course Number and Section: BU224–0X**

**Date:**

**General Instructions for all Assignments**

1. Unless specified differently by your course instructor, save this assignment template to your computer with the following file naming format: Course number\_section number\_Last\_First\_unit number

2. At the top of the template, insert the appropriate information: Your Name, Course Number and Section, and the Date

3. Insert your answers below, or in the appropriate space provided for in the question. Your answers should follow APA format with citations to your sources and, at the bottom of your last page, a list of references. Your answers should also be in Standard English with correct spelling, punctuation, grammar, and style (double spaced, in Times New Roman, 12–point, and black font). Respond to questions in a thorough manner, providing specific examples of concepts, topics, definitions, and other elements asked for in the questions.

4. Upload the completed Assignment to the appropriate Dropbox.

5. Any questions about the Assignment, or format questions, should be directed to your course instructor.

**In this Assignment, you will be assessed on the following outcomes:**

**BU224-3**: Examine how changes in the cost of production affect pricing and production quantity decisions of a firm in a perfectly competitive market.

**GEL-8.5:** Apply critical thinking to the field of study.

**Assignment**

In this Assignment, you will define and calculate the remaining six major cost elements of a business, when given the Total Costs and the Quantity Produced, as well as to use the computed costs to determine a minimum cost output level for that business. In addition, you will compute both the break-even price and the shut-down price for a hypothetical business in a perfectly competitive market, and determine if that business would incur an economic profit at various market prices, and should the firm continue to produce at each of those price levels.

**Questions**

Table 2.a. shows an LED light bulb manufacturer’s total cost of producing LED light bulbs.

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| **Table 2.a.** |
| **Cases of LED light bulbs produced in an hour** | **Total Cost** |
| 0 | $4,500  |
| 10 | $4,900 |
| 20 | $5,100 |
| 30 | $5,300 |
| 40 | $5,400 |
| 50 | $5,700 |
| 60 | $6,700 |
| 70 | $7,900 |
| 80 | $9,700 |
| 90 | $11,800 |

1. What is this manufacturer’s fixed cost? Explain why.
2. Assuming that you only know the Total Costs (TC) (as is shown in the Table 2.a. above) **explain how** you would calculate each of the following:
	1. Variable Cost (VC);
	2. Average Variable Cost (AVC);
	3. Average Total Cost (ATC);
	4. Average Fixed Cost (AFC); and,
	5. Marginal Costs (of a single case).
3. In Table 3.a., for each level of output, insert into the table the values for:
	1. the Variable Cost (VC);
	2. the Average Variable Cost (AVC);
	3. the Average Total Cost (ATC); and,
	4. the Average Fixed Cost (AFC).

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| **Table 3.a.** |
| Cases of LED light bulbs produced in an hour | Total Cost | Variable Costs | Average Variable Costs | Average Total Costs | Average Fixed Cost |
|   |   | a. | b. | c. | d. |
| 0 | $4,500  |   | n/a | n/a | n/a |
| 10 | $4,900 |   |   |   |   |
| 20 | $5,100 |   |   |   |   |
| 30 | $5,300 |   |   |   |   |
| 40 | $5,400 |   |   |   |   |
| 50 | $5,700 |   |   |   |   |
| 60 | $6,700 |   |   |   |   |
| 70 | $7,900 |   |   |   |   |
| 80 | $9,700 |   |   |   |   |
| 90 | $11,800 |   |   |   |   |

* 1. Given the information you computed in Table 3.a., what is the minimum cost output Level? Explain why.
1. Brenda Smith operates her own farm, raising chickens and producing eggs. She sells her eggs at the local farmers’ market, where there are several other egg producers’ also selling eggs by the dozen. (Brenda operates in a perfectly competitive market in which she is a “price taker.”) In order to make sure she does not lose money on selling eggs, she does an analysis of her costs for producing eggs as shown on Table 4.a.

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| **Table 4.a.** |
| Dozens of eggs | Fixed Cost | Total Cost | Variable Costs | Average Variable Costs per dozen | Average Total Costs per dozen |
| 0 | $3.35 | $3.35 | n/a | n/a | n/a |
| 10 | $3.35 | $10.50 | $7.15 | $0.72 | $1.05 |
| 20 | $3.35 | $16.40 | $13.05 | $0.65 | $0.82 |
| 30 | $3.35 | $23.10 | $19.75 | $0.66 | $0.77 |
| 40 | $3.35 | $30.00 | $26.65 | $0.67 | $0.75 |
| 50 | $3.35 | $36.50 | $33.15 | $0.66 | $0.73 |
| 60 | $3.35 | $48.00 | $44.65 | $0.74 | $0.80 |
| 70 | $3.35 | $64.40 | $61.05 | $0.87 | $0.92 |
| 80 | $3.35 | $80.00 | $76.65 | $0.96 | $1.00 |
| 90 | $3.35 | $135.00 | $131.65 | $1.46 | $1.50 |

* 1. What is Brenda’s break-even price for a dozen of eggs? Explain how you found that answer.
	2. What is Brenda’s shut-down price for a dozen of eggs? Explain how you found that answer.
	3. If the market price of a dozen eggs at the local farmers’ market is $1.45 per dozen, will Brenda make an economic profit? Explain how you determined your answer.
	4. If the market price of a dozen eggs at the local farmers’ market is $1.45 per dozen, should Brenda continue producing eggs in the **short run**? Explain how you determined your answer.
	5. If the market price of a dozen eggs at the local farmers’ market is 72 cents per dozen, will Brenda make an economic profit? Explain how you determined your answer.
	6. If the market price of a dozen eggs at the local farmers’ market is 72 cents per dozen, should Brenda continue producing eggs in the **short run**? Explain how you determined your answer.
	7. If the market price of a dozen eggs at the local farmers’ market is 64 cents per dozen, will Brenda make an economic profit? Explain how you determined your answer.
	8. If the market price of a dozen eggs at the local farmers’ market is 64 cents per dozen, should Brenda continue producing eggs in the **short run**? Explain how you determined your answer.

**--------------------------------------------**

**References:**

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| --- | --- |
|  | **Unit 8 Assignment: Break–even Price and Shut–down Price Grading Rubric:** |
| **Content** | **Percent Possible** | **Points Possible** |
| **Full Assignment** | **100%** | **80** |
|  |  |  |
| **Overall Writing:** | **20%** | **16** |
| **Correct coversheet information at the top of 1st page** | **5%** | **4.00** |
| **APA format for answers** | **3%** | **2.40** |
| **Correct citations** | **3%** | **2.40** |
| **Standard English no errors** | **4%** | **3.20** |
| **At least one, or more, references** | **5%** | **4.00** |
|  |  |  |
| **Answers: provides complete information demonstrating analysis and critical thinking:** | **80%** | **64** |
| **Individual Questions:** |  |  |
| **1. Calculate this manufacturer’s fixed cost** | **5%** | **4.00** |
| **2. a.–d. Define how this manufacturer’s variable cost, average variable cost, average total cost, average fixed cost, and marginal cost are calculated.** | **9%** | **7.20** |
| **3. a.–d. Compute this manufacturer's variable cost, average variable cost, average total cost, and average fixed cost** | **9%** | **7.20** |
| **3. e. Determine this manufacturer's minimum cost output level and explain.** | **6%** | **4.80** |
| **4. a. – Brenda's break-even price?** | **8%** | **6.40** |
| **4. b. – Brenda's shut-down price?** | **8%** | **6.40** |
| **4. c. – Any economic profit at $1.45 per dozen?** | **5%** | **4.00** |
| **4. d. – Continue producing at $1.45 per dozen?** | **6%** | **4.80** |
| **4. e. – Any economic profit at $0.72 per dozen?** | **6%** | **4.80** |
| **4. f. – Continue producing at $0.72 per dozen?** | **6%** | **4.80** |
| **4. g. – Any economic profit at $0.64 per dozen?** | **6%** | **4.80** |
| **4. h. – Continue producing at $0.64 per dozen?** | **6%** | **4.80** |
| **Sub-total for Individual Questions:** | **80%** | **64** |