

# Unit 3 Take Home FRQs

Please answer the questions clearly in the space provided. Remember to **R.O.L.L.** – **R**ead the entire question first, **O**rganize your answer, **L**ist your answer like the question, **L**abel everything.

## FRQ#1: Analyzing Costs (8 points)

Complete the following chart for a **perfectly competitive** firm selling its product at a market price of **\$35**, and then answer the following questions

OUTPUT (Q)	Total Revenue (TR)	Marginal Revenue (MR)	Variable Cost (VC)	Fixed Cost (FC)	Total Cost (TC)	Marginal Cost (MC)
0	\$0	--	\$0	\$10	\$10	--
1	\$35	\$35	\$30	\$10	\$40	\$30
2	\$70	\$35	\$50	\$10	\$60	\$20
3	\$105	\$35	\$60	\$10	\$70	\$10
4	\$140	\$35	\$70	\$10	\$80	\$10
5	\$175	\$35	\$85	\$10	\$95	\$15
6	\$210	\$35	\$105	\$10	\$115	\$20
7	\$245	\$35	\$130	\$10	\$140	\$25
8	\$280	\$35	\$170	\$10	\$180	\$40

- a. What is the **marginal cost** of the 8<sup>th</sup> unit of output? \$40
- b. To maximize profits or minimize losses, what output should this firm produce? 7  
 Explain how you got your answer. MR=MC rule (without going over)
- c. Using your answer from (b), what is the profit or loss **per unit** at the profit maximizing output? \$245 - \$140 = \$105 / 7 = \$15 per unit

## FRQ#2: Analyzing Costs (10 points)

- a. Draw side-by-side graphs for both the **industry** and Ichabod's firm (include D, MR, MC, ATC, and AVC).  
 i. Label the area of Ichabod's **Total Revenue** ①  
 ii. Label the area of **Total Cost** ①  
 iii. Label the **shut down point** ①
- b. Describe Ichabod's firm as it exists in part (a) in terms of the following:  
 i. Productive efficiency (yes) no because... P = MIN ATC ①  
 ii. Allocative efficiency (yes) no because... P = MC ①
- c. On the same set of side-by-side graphs, **use a different color** to show the results of an **increase in demand** for pumpkins and identify what happens to the following in the **short-run** as compared to part (a):  
 i. **Price** for Ichabod's firm INCREASE ①  
 ii. **Quantity** for Ichabod's firm INCREASE ①

