* The widget industry is perfectly competitive. The industry demand and supply functions for widgets are given below.

Qd = 424 – 40P

Qs  = 40 + 8P

* What is the equilibrium price and quantity for the industry?
* If the government establishes a price floor of $9, explain what will result in terms of excess demand or supply.
* If the government establishes a price ceiling of $6, explain what will result in terms of excess demand or supply.
* Assume the supply curve shifts to

Qs’ = 34 + 12P

What is the new equilibrium price and quantity?

* Assume in addition to the supply curve shifting, the demand curve shifts to

Qd’ = 484 – 38P

What happens to equilibrium price and output?

* Below is a table with total data for a firm in a perfectly competitive industry.

|  |  |
| --- | --- |
| Quantity | Total Cost |
| 0 | 100 |
| 10 | 220 |
| 15 | 300 |
| 20 | 360 |
| 25 | 450 |
| 30 | 600 |
| 35 | 770 |
| 40 | 960 |

* What is the marginal cost and average total cost for the firm at each level of output?
* If the prevailing market price is $34 per unit, how many units will be produced and sold? What are the profits per unit? What are total profits?
* Is the industry in long run equilibrium at this price? If not, what do you expect to happen to price over time?
* Jones Company operates within a monopolistically competitive industry. The estimated demand for its products is given by the following inverse demand function

P = 1760 – 12Q

It finance department has estimated its total cost function as

TC = 24,000 + 5 Q – 15 Q2 + 0.333 Q3

* What is the level of output that maximizes short run profits?
* What is the profit maximizing price?
* What are total profits?
* What is the effect of an increase in fixed costs of $5000 on equilibrium price and output?
* Smith Corp. has determined that its contribution margin, (P – MC)/P, is 40%. A recent market research study found the following relationship between adverting outlays and sales revenue.

|  |  |
| --- | --- |
| Advertising Outlays | Gross Revenues from Sales |
| $500,000 | $4,000,000 |
| $600,000 | $4,500,000 |
| $700,000 | $4,900,000 |
| $800,000 | $5,200,000 |
| $900,000 | $5,420,000 |
| $1,000,000 | $5,600,000 |

* What is the contribution to profits from increasing advertising sales by $1 if Smith Corp. is currently spending between $500,000 and $600,000 on advertising?
* What is the profit maximizing level of advertising? Explain.
* Ajax, Inc. is a monopolist. The estimated demand function for its product is

Qd = 120 – 0.8P + 12Y + 4A

Where Qd denotes quantity demanded, P denotes price, Y denotes personal income (in thousands of dollars), and A denotes advertising expenditures in hundreds of dollars.

Ajax’s marginal cost function is given as

MC = 21 + 4Q

Assume Y equals 3 and A equals 3 and fixed costs equal $1000

* What is the inverse demand function? (The equation demand equation in the form
P = a – bQd)?
* What is the profit maximizing price and quantity of output for Ajax, assuming it is an unregulated monopoly? What are its profits?
* If fixed costs increase to $1200, what will happen to equilibrium price and quantity?