Exam 1 Results for

Score for this quiz: **76** out of 100
Submitted Feb 25
This attempt took 76 minutes.

Question 1

0 / 4 pts

Solved Correctly, Doubted "None" Option and Guessed

If a firm spends $6,000 today on an investment it will receive paybacks of $4,000 in three years and $8,000 in seven years. If the interest rate is 7%, what is the net present value of this investment? Do not round intermediate steps, but round your final answer to the nearest dollar.

$C = \$6{,}000$
$r = 7\%$
$t=3 \quad \pi = \$4{,}000$
$t=7 \quad \pi = \$8{,}000$

$$PV = \frac{4000}{(1.07)^3} + \frac{8000}{(1.07)^7} = 8{,}247.2466$$

$$8{,}247.2466 - 6{,}000.00$$

$\$2{,}247 = NPV$

- $8,912
- Correct Answer — None of the answers shown is correct. ←
- $7,512
- $8,870
- $2,000
- You Answered — $8,642

Question 2

4 / 4 pts

A firm's current profits are $160,000. These profits are expected to grow indefinitely at a constant annual rate of 3.5 percent. If the firm's opportunity cost of funds is 5.5 percent, what is the value of the firm?

$$PV_{FIRM} = 160{,}000\,\frac{(1+r)}{(r-g)}$$

$$= 160{,}000\,\frac{(1+0.055)}{(0.055-0.035)}$$

$$= 160{,}000\left(\frac{1.055}{0.02}\right)$$

$$PV_{FIRM} = \boxed{8{,}440{,}000}$$

- Correct! — $8,440,000
- $45,714
- $8,280,000
- $8,124,000
- $320,000

Question 3

4 / 4 pts

What is the value of a preferred stock that pays a perpetual dividend of $2,400 at the end of each year when the interest rate is 6 percent?

- None of the answers shown is correct.
- $400
- $144
- $14,400
- More information is needed to answer this question.

Correct!

- $40,000

$PV = \frac{2400}{(0.06)} = \$40{,}000$

Question 4

4 / 4 pts

Assume the following occurs in the market for Good X: (1) an increase in government regulation; (2) a decrease in the price of complement; (3) income increases; and (4) an excise tax is imposed. Which of the following correctly summarizes the impact on equilibrium price and quantity?

- The equilibrium quantity will decrease. The equilibrium price will increase.
- The equilibrium quantity will decrease. Any change in equilibrium price is uncertain.
- The equilibrium quantity will increase. Any change in equilibrium price is uncertain.
- The equilibrium quantity will stay the same. The equilibrium price will increase.
- The equilibrium price will decrease. Any change in equilibrium quantity is uncertain.
- The equilibrium quantity and equilibrium price will both increase.

Correct!

- The equilibrium price will increase. Any change in equilibrium quantity is uncertain.

(1) ↓S
(2) ↑D
(3) ↑D
(4) ↓S

D↑, S↓

E^*_P ↑
E^*_Q NO CHANGE

Question 5

4 / 4 pts

The total benefit and total cost from a continuous activity are, respectively, given by the following equations: $B(Q) = 72Q - 10Q^2$; $C(Q) = 10 + 1.25Q^2$. At what quantity are net benefits

maximized?

$B(Q) = 72Q - 10Q^2$ $C(Q) = 10 + 1.25Q^2$

$MB = 72 - 20Q$ $MC = 2.5Q$

$72 - 20Q = 2.5Q$

$+20Q \quad +20Q$

$\frac{72}{22.5} = \frac{22.5Q}{22.5}$

$Q = 3.2$

- 4.80
- 2.45
- 3.60
- None of the answers listed is correct.
- 2.80
- Correct! 3.20

Question 6

4 / 4 pts

The demand for good *X* is given by: $Q_X^d = 2{,}900 - 4P_X - 2.7P_C - 1.33P_D + 0.84M$, where P_X is the price of good X, P_C is the price of good C, P_D is the price of good D, and M is income. Which of the following statements is correct?

complements

- Goods X and C are substitutes; goods X and D are complements; good X is a normal good.
- Correct! Goods X and C are complements and Goods X and D are complements.
- Goods X and C are complements; goods X and D are substitutes; good X is a normal good.
- None of the other statements is correct.
- Goods X and C are complements; goods X and D are substitutes; good X is an inferior good.
- Goods X and C are substitutes; goods X and D are complements; good X is an inferior good.

Question 7

4 / 4 pts

The demand function for a good is as follows: $Q = 40 - P/10$. When graphing the inverse demand function, the vertical intercept would be 240. At a price of $240, the quantity demanded would be 16 units.

$(10)Q = 40 - \frac{P}{10}(10)$

$10Q = 400 - P$

$-10Q \quad +P \quad +P \quad -10Q$

$P = 400 - 10Q$

$Q = 40 - \frac{(240)}{10}$

$Q = 40 - 24 = 16$

$P = 400 - 10(16)$

$P = 400 - 160 = 240$

- $400, 24
- $160,30

$40, 16

$40, 24

Correct! None of the answers listed is correct. (240, 16) Not Listed

$10, 16

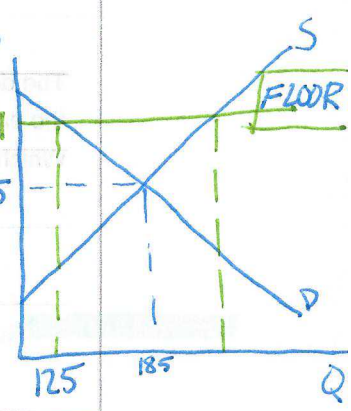
Question 8

4 / 4 pts

The demand function in a market is: Qd = 260 – 15P. The supply function is: Qs = 60P – 115. If the government imposes a price restriction at $9, this would be a price _____, and result in a _____.

$260 - 15P = 60P - 115$
$+115 \quad +15P \quad +15P \quad +115$
$\frac{375}{75} = \frac{75P}{75}$
$P = 5$

$Qd = 260 - 15(9)$
$Qd = 125$
$Qs = 60(9) - 115$
$Qs = 425$



ceiling, surplus of 125 units

Correct! floor, surplus of 300 units

ceiling, shortage of 125 units

None of the answers listed is correct.

floor, shortage of 300 units

$Qs - Qd = 425 - 125 = 300$

S > D
Surplus

Question 9

4 / 4 pts

A market is in equilibrium. Some changes occur that allow you to predict a definite increase in the equilibrium quantity, but you cannot state what will happen to equilibrium price. Which of the following would be consistent with this scenario?

There is an increase in the cost of an input, an increase in government regulation, and an increase in the number of consumers.

Firms expect a lower price, there is a decrease in the number of consumers, and there is a negative change in consumer tastes.

There is an increase in income (assume an inferior good), a decrease in the price of a substitute in production, and consumers expect a higher price.

Correct!

There is an increase in the number of consumers, an increase in the number of firms, and a decrease in the price of a complement.

There is a positive change in consumer tastes, an increase in the number of firms, and a decrease in income.

Question 10

4 / 4 pts

The demand function in a market is as follows: Qd = 195 – 11P. The supply function is as follows: Qs = 6P – 26. At what price is there no shortage and no surplus?

Correct!

None of the answers listed is correct.

$15

$9

$12

$18

$16

$195 - 11P = 6P - 26$

$+26 \quad +11P \quad +11P \quad +26$

$195 = 17P$

$+26$

$\frac{17P}{17} = \frac{221}{17}$

$P = 13$

$E^*_P = \$13$ Not Listed

Question 11

4 / 4 pts

The demand curve for a good is as follows: Qd = 1560 – 6P. What is the consumer surplus if the price is $220?

$Q = 1560 - 6P$

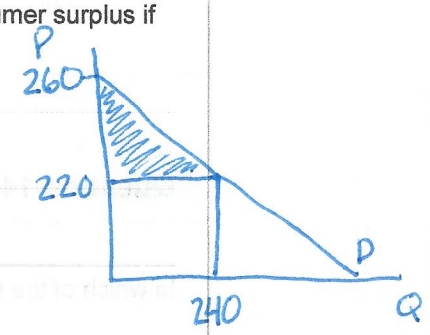
$+6P \quad +6P$

$Q + 6P = 1560$

$-Q \quad -Q$

$\frac{6P}{6} = \frac{1560}{6} - \frac{Q}{6}$

$P = 260 - \frac{1}{6}Q$



Correct!

$4,800

None of the answers listed is correct.

$160,800

$P = 220 \rightarrow Q = 1560 - 6(220)$

$Q = 1560 - 1320$

$Q = 240$

$CS = \frac{1}{2}bh$

$= \frac{1}{2}(240)(260 - 220)$

$= \frac{1}{2}(240)(40)$

$= \frac{1}{2}(9600)$

$CS = 4800$

Question 12

4 / 4 pts

The inverse demand function for a good is as follows: P = 48 – 2Q. What is the price elasticity of demand at a price of $20? Round your final answer to two decimal places.

–2.86

–0.46

Correct!

–0.71

–1.40

–1.69

$P = 48 - 2Q$

$+2Q \quad +2Q$

$P + 2Q = 48$

$-P \quad -P$

$\frac{2Q}{2} = \frac{48}{2} - \frac{P}{2}$

$Q = 24 - \frac{1}{2}P$

If $P = 20$

$Q = 24 - \frac{1}{2}(20)$

$Q = 24 - (10)$

$Q = 14$

$E_D = \text{slope} \cdot \frac{P}{Q} = \left(-\frac{1}{2}\right) \cdot \left(\frac{20}{14}\right)$

$= \left(-\frac{1}{2}\right)\left(\frac{10}{7}\right)$

$E_D = -0.71$

Question 13

4 / 4 pts

A firm sells 82 units of a good when it charges a price of $4 per unit. When it lowers its price to $2 per unit it sells 98 units. What is the price elasticity of demand? Round your final answer to two decimal places.

–1.19

–0.81

–3.75

Correct!

–0.27

–0.46

$Q_1 = 82 \quad P_1 = 4$

$Q_2 = 98 \quad P_2 = 2$

$E_D = \dfrac{\frac{(Q_2 - Q_1)}{\left(\frac{Q_1 + Q_2}{2}\right)}}{\frac{(P_2 - P_1)}{\left(\frac{P_1 + P_2}{2}\right)}} = \dfrac{\frac{(98-82)}{\frac{(82+98)}{2}}}{\frac{(2-4)}{\frac{(4+2)}{2}}} = \dfrac{\frac{16}{90}}{\frac{-2}{3}} = \dfrac{0.1778}{-0.6667}$

-0.2667

-0.27

Question 14

0 / 4 pts

In which of the following cases would a firm's total revenue decrease?

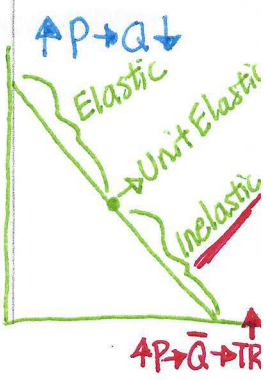
Price elasticity equals –1.00 and the firm decreases the selling price.

You Answered

Price elasticity equals –1.30 and the firm decreases the selling price.

Correct Answer

Price elasticity equals 0.00 and the firm decreases the selling price.



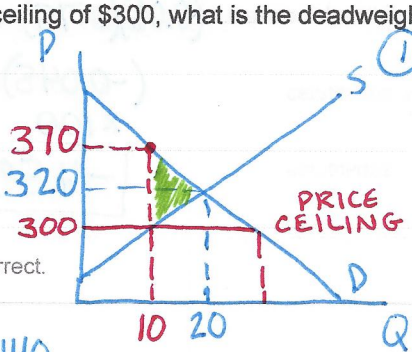
Max TR : $E = |-1|$ → $|0| < 1$ = Inelastic → ↓P → TR↓

- Price elasticity equals –1.00 and the firm increases the selling price.
- Price elasticity equals –0.76 and the firm increases the selling price.

Question 15

4 / 4 pts

The demand function in a market is Qd = 84 – P/5, while the supply function is Qs = P/2 – 140. If the government imposes a price ceiling of $300, what is the deadweight loss?



- $290
- $210
- None of the answers listed is correct.
- Correct! $350
- $380
- $250

$84 - \frac{P}{5} = \frac{P}{2} - 140$

$+140 \quad + \frac{P}{5} \quad + \frac{P}{5} \quad +140$

$224 = \frac{5P}{10} + \frac{2P}{10}$

$\left(\frac{10}{7}\right)224 = \frac{7P}{10}\left(\frac{10}{7}\right)$

$320 = P$

$Q_S = \frac{(300)}{2} - 140$

$Q_S = 150 - 140 = 10$

$Q_d = 84 - \frac{P}{5}$

$+\frac{P}{5} \quad +\frac{P}{5}$

$Q + \frac{P}{5} = 84 \quad (5)\frac{2P}{5} = 84 - Q \quad (5)$

$E^*_Q = 84 - \frac{(320)}{5} = 84 - 64 = 20$

$DWL = \frac{1}{2}(b)(h)$

$= \frac{1}{2}(370 - 300)(20 - 10) = 350$

$P = 420 - 5Q \rightarrow 420 - 5(10) = 420 - 50 = 370$

Question 16

4 / 4 pts

A firm's demand function is Qd = 42 – P/15. What is the firm's maximum total revenue?

- Correct! $6,615
- $6,280
- More information is needed to answer this question.
- None of the answers listed is correct.
- $6,290
- $6,840

$TR = P \cdot Q$

$TR = P(42 - P/15)$

$TR = 42P - \frac{P^2}{15}$

$MR = \text{derivative}(TR)$

$MR = 42 - \frac{2P}{15}$

set $MR = 0$

$42 - \frac{2P}{15} = 0$

$\left(+\frac{15}{2}\right)42 = +\frac{2}{15}P\left(\frac{15}{2}\right)$

$315 = P$

If $P = 315$

$Q = 42 - \frac{(315)}{15}$

$Q = 42 - 21$

$Q = 21$

$TR = P \cdot Q$

$TR = (315)(21)$

$TR = 6615$

Question 17

4 / 4 pts

The cross-price elasticity between goods X and Y is 0.75. If the price of good Y decreases by 6%, the quantity demanded for good X will _____. Goods X and Y are _____.

$CPE_D = \frac{\%\,Q_D^X}{\%\,P^Y}$

$(-6\%)0.75 = \frac{\%\,Q_D^X\,(-6\%)}{(-6\%)}$

$(0.06)(0.75) = \%\,Q_D^X$

$(-0.045) = \%\,Q_D^X$

$\times 100$

-4.5%

$CPE_D = \frac{-4.5\%\,(x)}{-6\%\,(y)}$

same sign = complements

- decrease by 4.00%, complements
- decrease by 1.50%, complements
- decrease by 1.50%, substitutes

Correct!

- None of the answers listed is correct.
- increase by 1.50%, substitutes
- increase by 4.00%, substitutes

Question 18

0 / 4 pts

Guessed - Ran out of time

An ice cream shop conducted a regression analysis using sales of ice cream per day in gallons and the selling price per gallon to generate the attached regression. Regression #1.docx

What are the shop's estimated daily sales of ice cream rounded to the nearest gallon if the selling price is $5.00 per gallon? Round all parameters to three decimal places before doing your calculations.

Coefficients
Intercept 425.70720
Price -22.763649

You Answered

- 298

- None of the answers shown is correct.

Correct Answer

- 312
- 403
- 344

$Q = 425.7072055 - 22.76364936P$

If $P = \$5$

$Q = 425.7072055 - 22.76364936(5)$

$= 425.7072055 - 113.8182468$

$= 311.88895787$

$Q = 312$

Question 19

4 / 4 pts

P-value (Price) = 1.43855E-07

↓

0.000000143855 is definitely less than $\alpha = 0.0125$.

A different ice cream shop conducted a regression analysis using sales of ice cream per day in gallons and the selling price per gallon to generate the attached regression. Regression # 2.docx

Assume $\alpha = 0.0125$. Which of the following correctly states if price is statistically significant in "explaining" changes in the sales of ice cream and for the right reason?

If P-value < α, price is statistically significant (reject the null)

Price is statistically significant in "explaining" sales of ice cream because the adjusted R Square is positive.

Price is not statistically significant in "explaining" sales of ice cream because the adjusted R Square is less than 0.50.

Price is statistically significant in "explaining" sales of ice cream because the coefficient on the price term is negative.

Price is not statistically significant in "explaining" sales of ice cream because the P-value is greater than alpha.

Correct!

Price is statistically significant in "explaining" sales of ice cream because the P-value is less than alpha.

Question 20

4 / 4 pts

A firm does an elasticity calculation based on past sales information and discovers its price elasticity of demand is –0.67. This means the firm's demand is Inelastic and the percentage change in price is larger than the percentage change in quantity demanded (in absolute value.)

$E_p = |-0.67| < 1 \rightarrow$ Inelastic

$-0.67 \rightarrow -\frac{2}{3}$ means $\Delta Qx = 2$, $\Delta Px = 3$

$\Delta Px = 3 > \Delta Qx = 2$

Percentage Change in Price is Larger

Correct!

- **inelastic, larger**
- elastic, smaller
- elastic, larger
- inelastic, smaller

Question 21

0 / 4 pts

A firm has a straight, downward-sloping inverse demand curve. At a quantity smaller than the one where the firm's total revenue is maximized, the price elasticity of demand > 1, and the firm's marginal revenue is Positive

less than one in absolute value, positive

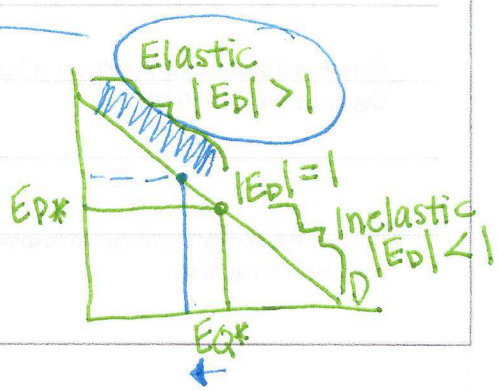
You Answered — less than one in absolute value, negative

Correct Answer — greater than one in absolute value, positive

greater than one in absolute value, equal to zero

greater than one in absolute value, negative

less than one in absolute value, equal to one



Question 22

4 / 4 pts

The inverse demand function in a market is: P = 740 – 9Q. The inverse supply function is: P = 240 + 11Q.

At a price of $500, shortage and the price will increase.

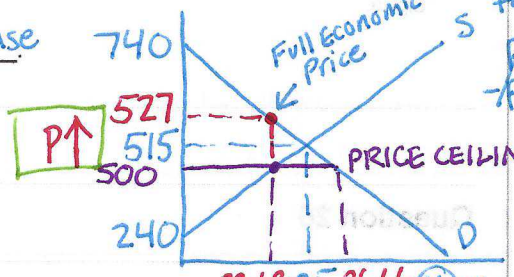
the market is in equilibrium, stay the same

there is a surplus, decrease

there is a shortage, decrease

Correct! — there is a shortage, increase

there is a surplus, increase



(1) $740 - 9Q = 240 + 11Q$ ~ Shortage

$\frac{500}{20} = \frac{20Q}{20}$

$25 = Q$

(2) $P = 740 - 9(25)$

$= 740 - 225$

$P = 515$

(3) Demand: $P = 740 - 9Q$

$+9Q \quad +9Q$

$P + 9Q = 740$

$-P \quad -P$

$\frac{9Q}{9} = \frac{740 - P}{9}$

$Q_d = 82.22 - \frac{P}{9}$

(4) Supply: $P = 240 + 11Q$

$-11Q \quad -11Q$

$P - 11Q = 240$

$-P \quad -P$

$\frac{-11Q}{-11} = \frac{240 - P}{-11}$

$Q_S = \frac{P}{11} - 21.818$

(5) $Q_d = 82.22 - \frac{(500)}{9}$

$= 82.22 - 55.55$

$Q_d \approx 26.66$

(6) $Q_S = \frac{(500)}{11} - 21.818$

$= 45.4545 - 21.818$

$Q_S \approx 23.63$

(7) $Q_d > Q_S$ = Shortage

(8) To find F.E.P

$P = 740 - 9(23.63)$

$P = 740 - 212.728$

$P = 527.27$

↑ is > 515

Question 23

0 / 4 pts

Economic π = Accounting π − Opportunity Cost

Which of the following statements about accounting profit and economic profit is incorrect?

You Answered — It is possible for a firm to have an accounting profit and an economic loss simultaneously.

Example: (loss) Econ π = −2; (Profit) Account π = 5; Opp Cost = 7

(−2) = (5) − (7)

LOSS PROFIT COSTS

Correct Answer — If a firm has an economic loss it must also have an accounting loss.

This is incorrect because we can have economic loss and also accounting profit if opportunity costs is greater than A.P.

It is possible for a firm to have an accounting profit and an economic profit simultaneously.

None of the other statements is incorrect.

If you have an economic loss, that means Economic Profit is Negative. BUT, even though it is Negative it could be that Opportunity Cost subtracted from Accounting Profit is a larger number (o.c) than Acct Prof, so there is no Accounting Loss

It is possible for a firm to have an accounting profit and an economic break even simultaneously.

Question 24

0 / 4 pts

Guessed - Ran out of time

*Started Solving because I wanted to see if it could be solved.

The inverse demand function in a market is as follows: P = 100 – Q/9. Assume the market is in equilibrium at the price of $80. If the government imposes a price ceiling of $60, what is the ***increase*** in the consumer surplus?

(Suggestion: Carefully draw a graph.)

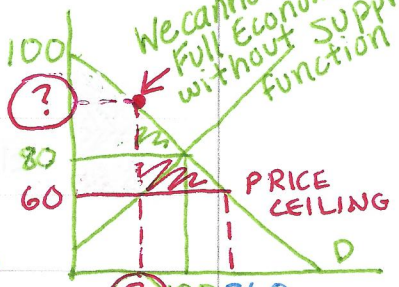
$P = 100 - \frac{Q}{9}$

$+\frac{Q}{9} \quad +\frac{Q}{9}$

$P + \frac{Q}{9} = 100 \rightarrow (9)\frac{Q}{9} = (9)100 - P(9)$

$-P \quad -P$

$Q = 900 - 9P$



We cannot determine Full Economic Price without supply function

- $3,600
- $5,400
- Correct Answer — More information is needed to answer this question.
- $1,800
- You Answered — $4,800
- None of the answers listed is correct.

(2) $Q = 900 - 9(80)$

$= 900 - 720$

$Q = 180$

(3) $Q = 900 - 9(60)$

$= 900 - 540$

$Q = 360$

We can't determine consumer surplus because we weren't given a supply function.

Question 25

4 / 4 pts

*Ch 3 Week of 02/08 Video 3 "Sources of Price Elasticity Data"

A firm changed the price of a good it sells, and its total revenue decreased. Which of the following would be most consistent with this observation?

Our Notes Say

If $|E_D| > 1$ (Elastic) P↓ TR↑

Elastic: P↑ TR↓

If $|E_D| < 1$ (Inelastic)

Inelastic: P↓ TR↓

P↑ TR↑

These are our two options.

- ✗ The good is a luxury, and the firm decreased the selling price.
  Luxury Good = Elastic → P↓ → TR↑
- ✗ There are many substitutes for the good and the firm decreased the selling price.
  Many substitutes = Elastic → P↓ → TR↑
- Correct! — Consumers have little time to respond to the price change and the firm decreased the selling price.
  More Time = More Elastic, so little time = Inelastic → P↓ → TR↓
- ✗ The good is very inexpensive and the firm increased the selling price.
  Smaller % spent of income = Inelastic → P↑ → TR↑
- ✗ The good is a durable good and the firm decreased the selling price.
  Durable Good = Elastic → P↓ → TR↑

Quiz Score: **76** out of 100