

VERSION 1

I. SOLVE THE FOLLOWING PROBLEM. SHOW YOUR WORK (formulas, calculations, results):

INFORMATION:				FIND: (50% of the total grade)		
<b>ESTIMATED DEMAND (<math>R^2-.9</math>)</b>				1	Write model's equations. Comment on $R^2$ & $t$ -stat ?	5%
<i>Regression Output</i>	<i>Coefficient</i>	$\sigma_E$	$t$ -stat			
Intercept	20	15.4	1.3			
Own Price (P)	- 4	0.65	-6.2	2	Equilibrium price $P_E$ , quantity $Q_E$ , and total revenue ( $TR_E$ )?	10%
Other Good Price ( $P_o$ )	4	1.56	2.57	3	Own-price (P), cross-price ( $P_o$ ), income elasticities (I) of demand. Comment on what kinds of goods they indicate?	10%
Income (I)	1	0.59	1.7			
<b>ESTIMATED SUPPLY (<math>R^2-.4</math>)</b>						
<i>Regression Output</i>	<i>Coefficient</i>	$\sigma_E$	$t$ -stat			
Intercept	30	3.3	9.0	4	New equilibrium price $P_E$ , quantity $Q_E$ , and total revenue ( $TR_E$ )?	10%
Own Price (P)	5	1.9	2.6	5	New own-price (P), cross-price ( $P_o$ ), income elasticities (I) of demand. Comment on what kinds of goods they indicate (if any change)?	10%
<b>Values for t-distribution</b>						
<i>Confidence Level</i>	90%	95%	99%			
$t$ -stat values	1.645	1.96	2.58	6	Expected total revenue ( $TR_{Exp}$ )?	5%
				<b>Case 1: Assume: <math>I=\\$50</math> ; <math>P_o=\\$1</math></b>		
				<b>Case 2: Assume change in: <math>I=\\$40</math> ; <math>P_o=\\$3</math></b>		
				<b>Assume probability of change (Case 2) is .4</b>		

II. Choose and answer ONE of the following THREE questions (including sub-questions) by giving brief definitions, graphs, formulas, and/or explanations:

<b>1. Explain main concepts of managerial economics:</b>	<b>50%</b>
A. What is managerial economics?	5%
B. Main topics, objects, and objectives of its study?	10%
C. Circular flow of economic activity	10%
D. Nature and objective of the firm	10%
E. Profits: accounting vs. economic profits; present value of profits	15%
<b>2. Describe (in written, graphs, and examples) basic tools and methods of managerial economics:</b>	<b>50%</b>
A. Functional relationships; total, average, marginal functions	10%
B. Economic models. Their use.	5%
C. Model of supply & demand	10%
D. Probability distributions	10%
E. Probability statistics: $\mu$ , $\sigma$ , $v$	15%
<b>3. Review (with explanations, definitions and formulas) elements of Regression Analysis:</b>	<b>50%</b>
A. Regression analysis, least-square regression	5%
B. Testing regression results: $R^2$ , $t$ -tests	10%
C. Multiple regression; model, data, functional forms	15%
D. Linear transformation of multiplicative functions	5%
E. Problems with the multiple cross-sectional regressions	15%

➤ **Note:** You can answer extra questions and/or sub-questions to gain extra credit(s)

VERSION 2

I. SOLVE THE FOLLOWING PROBLEM. SHOW YOUR WORK (formulas, calculations, results):

INFORMATION:				FIND: (50% of the total grade)		
<b>ESTIMATED DEMAND (<math>R^2-.9</math>)</b>				1	Write model's equations. Comment on $R^2$ & $t$ -stat ?	5%
<i>Regression Output</i>	<i>Coefficient</i>	$\sigma_E$	$t$ -stat			
Intercept	100	20.0	5.0			
Own Price (P)	-3	1.18	-2.5	2	Equilibrium price $P_E$ , quantity $Q_E$ , and total revenue ( $TR_E$ )?	10%
Other Good Price ( $P_o$ )	-8	4.10	-1.9	3	Own-price (P), cross-price ( $P_o$ ), income elasticities (I) of demand. Comment on what kinds of goods they indicate?	10%
Income (I)	2	0.67	3.0			
<b>ESTIMATED SUPPLY (<math>R^2-.4</math>)</b>						
<i>Regression Output</i>	<i>Coefficient</i>	$\sigma_E$	$t$ -stat			
Intercept	50	29.4	1.7	4	New equilibrium price $P_E$ , quantity $Q_E$ , and total revenue ( $TR_E$ )?	10%
Own Price (P)	2	1.0	2.0	5	New own-price (P), cross-price ( $P_o$ ), income elasticities (I) of demand. Comment on what kinds of goods they indicate (if any change)?	10%
<b>Values for <math>t</math>-distribution</b>						
<i>Confidence Level</i>	90%	95%	99%			
$t$ -stat values	1.645	1.96	2.58	6	Expected total revenue ( $TR_{Exp}$ )?	5%
				<b>Case 1: Assume: <math>I=\\$50</math> ; <math>PO=\\$10</math></b>		
				<b>Case 2: Assume change in: <math>I=\\$25</math> ; <math>PO=\\$5</math></b>		
				<b>Assume probability of change (Case 2) is .3</b>		

II. Choose and answer ONE of the following THREE questions (including sub-questions) by giving brief definitions, graphs, formulas, and/or explanations:

<b>1. Review essentials of business forecasting:</b>	<b>50%</b>
A. Sources of data: experts' opinions, surveys, market experiments	5%
B. Time-series (TS) forecasting	15%
C. Components of TS analysis, ratio-to-trend adjustment	10%
D. Barometric forecasting	5%
E. Leading/lagging variables, composite/diffusion index	15%
<b>2. Explain main features of the production function and factors of production:</b>	<b>50%</b>
A. The production function (PF), Cobb-Douglas PF	10%
B. Substitutability, returns to factor/to scale	10%
C. Short run vs. long run, short-run vs. long run returns to scale	10%
D. Production functions: total, average, marginal	10%
E. Optimal employment of a factor, substitution rule	10%
<b>3. Define and illustrate (both in written, and in graphics) elements of the Demand theory:</b>	<b>50%</b>
A. Demand, the law of demand	5%
B. Individual vs. market demand	10%
C. Movements along vs. shifts in demand,	10%
D. What are determinants of demand, how they affect demand ?	10%
E. Elasticity, types of elasticity of demand (P, I, $P_o$ ), types of goods	15%

➤ **Note:** You can answer extra questions and/or sub-questions to gain extra credit(s)

VERSION 3

I. SOLVE THE FOLLOWING PROBLEM. SHOW YOUR WORK (formulas, calculations, results):

INFORMATION:				FIND: (50% of the total grade)		
<b>ESTIMATED DEMAND (<math>R^2-.9</math>)</b>				1	Write model's equations. Comment on $R^2$ & $t$ -stat ?	5%
Regression Output	Coefficient	$\sigma_E$	$t$ -stat			
Intercept	120	76.9	1.56			
Own Price (P)	-5	0.63	-8.0	2	Equilibrium price $P_E$ , quantity $Q_E$ , and total revenue ( $TR_E$ )?	10%
Other Good Price ( $P_o$ )	1	0.39	2.57	3	Own-price (P), cross-price ( $P_o$ ), income elasticities (I) of demand. Comment on what kinds of goods they indicate?	10%
Income (I)	-1	0.53	-1.9			
<b>ESTIMATED SUPPLY (<math>R^2-.4</math>)</b>						
Regression Output	Coefficient	$\sigma_E$	$t$ -stat			
Intercept	15	2.14	7.00	4	New equilibrium price $P_E$ , quantity $Q_E$ , and total revenue ( $TR_E$ )?	10%
Own Price (P)	1	0.50	1.99	5	New own-price (P), cross-price ( $P_o$ ), income elasticities (I) of demand. Comment on what kinds of goods they indicate (if any change)?	10%
<b>Values for <math>t</math>-distribution</b>						
Confidence Level	90%	95%	99%			
$t$ -stat values	1.645	1.96	2.58	6	Expected total revenue ( $TR_{EXP}$ )?	5%
				<b>Case 1: Assume: <math>I=\\$100</math> ; <math>PO=\\$1</math></b>		
				<b>Case 2: Assume change in: <math>I=\\$80</math> ; <math>PO=\\$2</math></b>		
				<b>Assume probability of change (Case 2) is .2</b>		

II. Choose and answer ONE of the following THREE questions (including sub-questions) by giving brief definitions, graphs, formulas, and/or explanations:

<b>1. Review (both in written, and in graphics) elements of Demand theory:</b>	<b>50%</b>
A. Demand, law of demand	5%
B. Individual vs. market demand	5%
C. Movements along vs. shifts in demand,	10%
D. What are determinants of demand, how they affect demand ?	15%
E. Elasticity, types of elasticity of demand (P, I, $P_o$ ), types of goods	15%
<b>2. Review elements of Business Cycles and related government policies:</b>	<b>50%</b>
A. Functional relationships; total, average, marginal functions	10%
B. Economic models	10%
C. Model of supply & demand	10%
D. Probability distributions	10%
E. Probability statistics: $\mu$ , $\sigma$ , $v$	10%
<b>3. Review (both in written, and in graphics) elements of Aggregate Supply (AS) / Aggregate Demand (AD) theory:</b>	<b>50%</b>
A. Sources of data: experts' opinions, surveys, market experiments	10%
B. Time-series (TS) forecasting	15%
C. components of TS analysis, ratio-to-trend adjustment	
D. Barometric forecasting	10%
E. leading/lagging variables, composite/diffusion index	15%

➤ **Note:** You can answer extra questions and/or sub-questions to gain extra credit(s)