

Strayer University — Manassas Campus
Quantitative Methods — MAT540

Midterm Exam

This is a take-home (open Text, class-notes & Student Guide) midterm exam. Read carefully the entire exam before attempting to solve any of the problems and then budget your time: do first what you know best. *Show and submit all your work to justify your answers*; wherever appropriate, identify the given data, the applicable formulae, substitutions and results. Neither collaboration nor use of materials other than the text, class notes or the student guide is permitted; give proper credit to any source or shortcut you may use. By submitting the exam by the **deadline, Wednesday, 10/25/06, 6:15 PM**, you affirm that you have abided by these rules:

.....
Student's name

Work through the problems in the following pages and answer all questions.

#	Pts.	Score	Instructor's comment
1	10		
2	10		
3	10		
4	10		
5	10		
6	15		
7	15		
8	20		

Good luck!

(And, may you need none at all!)

-- Attach (staple) this sheet as a cover of your answer sheets. --

Problem 1. (10 points)

Chapter 1, problem 16 (p.24). However, the price of advertising just fell to \$9,000.

Problem 2. (10 points)

Chapter 1, problem 22 (p.25). However, in the second part of the problem, change the constraint into $5x + 4y = 100$.

Problem 3. (10 points)

Chapter 2, problem 4 (p.57–58). Clearly identify the probability distribution and specify any variable(s) and parameter(s), and explain your reasoning for the identification.

Problem 4. (10 points)

Chapter 2, problem 12 (p.58). Before answering the question, develop the probability tree, showing marginal, conditional and joint probabilities, and then construct a table of joint probabilities with all marginal probabilities indicated.

Problem 5. (10 points)

Chapter 2, problem 28 (p.61). However, use that the standard deviation of $\sigma = 3$ months.

Problem 6. (15 points)

Chapter 3, problem 8 (p.104). However, replace: \$15,000 → \$14,000; \$20,000 → \$21,000; and \$8,000 → \$7,000; and \$5,000 → \$4,000.

Problem 7. (15 points)

Chapter 3, problem 14 (p.106). However, for part *b*, use that the probabilities for the states of nature (Loser, Competitive, Makes Playoffs) are 45%, 35%, and 20%, and compute: (1) the Expected Value (without perfect information), (2) the Expected Value with Perfect Information, and (3) the Expected Value of Perfect Information.

Problem 8. (20 points)

Chapter 5, problem 10 (p.220). However, use exponential smoothing forecasts, with $\alpha = 0.25$, and then compute the trend adjusted exponential forecast with $\beta = .30$.