**Financial Statistics Semester One Review Guide**

Use the textbook to help you complete these example problems. Problems are taken from chapter 1 & chapter 2 textbook examples which have worked out solutions for you to check your answers with (examples marked with an asterisk \* are slightly modified). Re-doing problems from quizzes is also highly recommended for studying.

Unit 1: The Stock Market

* 1.1 Business organization
	+ Example 1: Michelle invests $15,000 in a partnership that has four other partners. The total investment of all partners is $240,000. What percent of the business does Michelle own?
	+ Example 2: The total number of shares of stock in the Bulls Corporation is 650,000. Mike owns 12% of the shares. How many shares of Bulls Corporation stock does he own?
	+ Example 3: Three partners are investing a total of $900,000 to open a garden and landscaping store. Their investments are in the ratio 2:3:5. How much does the partner that invested the least contribute?
* 1.2 Stock market data

*Use the following stock market data table for XYZ Corporation for the questions below.*



* + Example 1\*: Interpret each value in the stock market data table above,

Last –

Trade time –

Chg –

Open –

52-week High –

52-week Low –

Sales in 100s –

High –

Low –

* + Example 3: At what price did XYZ Corporation close on May 4?
* 1.6 Stock transactions
	+ Example 1: Several years ago, Marlene purchased stock for $7,241. Last week she sold the stock for $9,219. What was her gross capital gain?
	+ Example 2: Five years ago, Jessica bought 300 shares of a cosmetics company’s stock for $34.87 per share. Yesterday she sold all of the shares for $41 per share. What was her capital gain?
* 1.7 Stock transaction fees
	+ Example 1\*: Lee made one trade through his online discount broker, We-Trade. We-Trade charges a fee of 1.3% per trade. Lee’s stock purchase was for $3,456 How much did he spend on the day’s purchase, including broker fees?
	+ Example 3\*: Erin purchased $23,510 worth of stock and paid her broker a 1% broker fee. She sold when the stock price increased to $27,300, and again paid a 1% broker’s fee. Compute her net capital gain.
* 1.9 Dividend income
	+ Example 1: Roberta is considering purchasing a common stock that pays an annual dividend of $2.13 per share. If she purchases 700 shares for $45.16 per share, what would her annual income be from dividends?
	+ Example 2: Elyse owns 2,000 shares of a corporation that pays a quarterly dividend of $0.51 per share. How much should she expect to receive in a year?

* + Example 3: Kristen owns common stock in Max’s Toy Den. The annual dividend is $1.40. The current price is $57.40 per share. What is the yield of the stock to the nearest tenth of a percent?

Unit 2: Modeling a Business

* 2.1 Interpret scatterplots
	+ Example 2: Rachael wants to interpret the trend shown in the scatterplot. What do you notice about the relationship between temperature and water bottle sales? Is there an explanatory variable and a response variable?
	+ Example 3: Determine if the following scatterplot depicts a positive correlation or a negative correlation.
	+ Example 4: The scatterplot shows the relationship between the number of text messages made by each of ten juniors while studying for Mr. Galati’s chemistry test last week and their scores on the test. Describe the trends you see in the data.
* 2.2 Linear regression
	+ Example 2: Interpret the slope as a rate for Rachael’s linear regression line. Use the equation from Example 1, $y=4.44x-187.67$
	+ Example 3: Rachael is stocking her concession stand for a day in which the temperature is expected to reach 106 degrees Fahrenheit. How many water bottles should she pack? (use the regression equation from Example 2 above.)
	+ Example 4: The correlation coefficient for the linear regression for Rachael’s data is *r = 0.97.* Interpret the correlation coefficient.
	+ Example 5\*: The coefficient of determination for the linear regression for Rachael’s data is $r^{2}=0.9409$. How much faith should Rachael have in her prediction? Explain.
* 2.4 Fixed & variable expenses
	+ Example 1: The art students have researched all of their potential expenses. The fixed expenses are $17,600. The labor and materials required for each pair of painted jeans produced cost $7.53. Represent the total expenses as a function of the quantity produced, *q*.
	+ Example 2: Kivetsky Ski Supply manufactures hand warmers for skiers. The expense function is *E* = 1.18*q* + 12,000. Find the average cost of producing one pair of hand warmers if 50,000 hand warmers are produced.
	+ Example 3: Willie’s Widgets has created a demand function for its widgets, where *q* is the quantity demanded and *p* is the price of one widget: *q* = –112*p* + 4,500.

Its expense function is *E* = 3.00*q* + 18,000. Express the expense function as a function in terms of *p*.

* 2.6 Breakeven analysis
	+ Example 1: Determine the prices at the breakeven points for the Picasso Paints product in Lesson 2-5. The expense function is *E* = –3,500*p* + 238,000, and the revenue function is *R* = –500*p2* + 30,000*p*.
	+ Example 2: Determine the revenue and expense for the Picasso Paints product at the breakeven points found in Example 1.
* 2.7 The profit equation
	+ Example 1: Determine the profit equation for the Picasso Paints product in Lesson 2-5. The revenue and expense functions were

*R* = –500*p*2 + 30,000*p E* = –3,500*p* + 238,000

* + Example 4: Algebraically, determine the price of the Picasso Paints product that yields the maximum profit.

Unit 3: Deterministic Modeling for Businesses

* 2.1 Linear Programming Maximization by graphing
	+ Re-do the problems from your class notes & quiz
* 2.3 Linear Programming Maximization by Excel Solver
	+ Re-do the problems from your class notes & quiz