Studyguide for Final Exam

December 15 2008, 3:30 - 5:30 PM JTB 140

Business Algebra Math 1090

1 General Exam Info

- Know the location of your exam ahead of time.
- Come 15 minutes earlier so you have time to set up everything, find a seat etc.
- The material covered is 0.1 - 0.7, 1.1 - 1.3, 1.5, 1.6, 2.1 - 2.4, 2.6, 3.1 - 3.4, 3.5, 4.1 - 4.2, 5.1 - 5.3, 6.1 - 6.5.
- You will be allowed to use a 4×6 inch notecard.
- You can use a scientific calculator or a graphing calculator. No or very little partial credit will be given for solutions without work shown.

2 General hints for preparing for the exam

The best way to prepare for a math exam is to do a lot of problems.

- Start now if have not yet. Some concepts just take a while to get comfortable with and to sink.
- There is a set of problems from old exams http://www.math.utah.edu/~hering/Math1090FinalReviewExercises.pdf as well as solutions http://www.math.utah.edu/~hering/Math1090FinalReviewKey.pdf on my webpage. Here is another old final exam http://www.math.utah.edu/~centeleg/final.html.
- I have made a Review Webworks that reviews the skills necessary to succeeding in the final exam.
- Go through your old exams. Make sure you understand now how to do each problem on these exams.
- Same with quizzes.
- Same with homeworks.

- Practice odd problems and check your answers in the back of the book. Go through each section of Key Terms and Formulas and make sure you remember them (or put them on your notecard). There are more problems in the review sections at the end of each chapter. More precise suggestions are below.

3 Algebraic expressions

- Radicals. (0.4, 1-32)
- Manipulating algebraic expressions. (0.5, 21-46)
- Factoring. (0.6, 9-44)
- Algebraic fractions. (0.7, 9-36)

4 Linear functions

- Solve a linear equation or inequality,
- Slope intercept form of a line (1.3, 25-34)
- Find the line through 2 given points (1.3, 35, 37)
- Determine the slope of a line (1.3, 17-24)
- Parallel and perpendicular lines (1.3, 39 -46)

5 Functions, graphing functions

- Evaluate a function at a point (1.2, 13-18)
- Operations with functions (1.2, 35-42)
- Shifts of graphs
- Composition of functions (2.6, 5-8)
- Find the inverse function (2.6, 17-21)

6 Quadratic functions

- Graph a quadratic function
- Quadratic formula (2.1, 1-34)
- Find the vertex of a parabola, and determine whether it is a maximum or minimum. (2.2, Problems 7-11)

7 Matrices and systems of equations

- Operations with matrices: adding, subtracting, multiplying (3.2, 1-42)
- Setting up a system of equations from text (1.5, 33-50)
- Writing the matrix equation corresponding to a system of equations, augmented matrix
- Use Gauss-Jordan elimination method to solve a system of equations (3.3, 13-17)
- Find inverse of a matrix (3.4, 5-12, 17-22)

8 Linear programming

- Graph solutions to a system of inequalities (=feasible region of a linear programming problem) (4.1, 13-26)
- Maximize or minimize a linear function subject to constraints (4.2, 1-26)
- Set up a linear programming problem from text (4.2, 27-36, 39-43)

9 Exponential and Logarithmic functions

- Graph an exponential function, together with asymptotes. (5.1, 9-18)
- Graph a logarithmic function, together with asymptotes. (5.2, 20)
- Rules of exponentials (0.3, 1-54)

- Rules of logarithms (5.2, 1-36)
- Solve exponential equations (5.3, 1-36)
- Solve logarithmic equations (5.3, 37-68)

10 Applications to business

- Revenue, cost and profit function (1.6, 1-13;).
- Break even analysis (1.6, 17-25; 2.3, 17-26)
- Supply and demand function, find the market equilibrium quantity and price (1.6, , 44-47, 51 - 58; 2.3, 5-14).
- Break even analysis, supply and demand for exponential functions (5.3, 91-98)
- Find future value and present value with compound interest, annual percentage yield. (6.2, 5-24, 37-44)
- Future value of ordinary annuity (6.3, 1-20), annuity due (6.3, 21-26), and decide which is which (6.3, 27-40).
- Present value of ordinary annuity (6.4, 1-14), annuity due (6.4, 15-26) and decide which is which (6.4, 27-32).
- Loans: compute the rate per pay period to pay back a loan, given the interest per pay period. (6.5, 3-8; 17-20) Different problems about loans (6.5, 22-25).