

## Final Exam Information

The final exam is 2.5 hours long and will be given on Thursday, May 28, 2009 at 11:10am. Please arrive early so that we can start on time. The test will cover all chapters except for 9. To study for this test, go through your homework, previous exams, class handouts, and class examples. You will need a calculator. You may not share calculators or use mine.

Be familiar with the instructions specified in the textbook exercises and class handouts. The wording on the test will be similar. It is important to not just know how to do a problem, but to understand what exactly the problem is asking you to do.

See Final Exam Review (FER) problems in the Homework section of MyMathLab. You should expect to see a subset of those problems on the final exam. A sampling of word problems we have covered are shown below.

**1. The total online spending in the United States has increased approximately linearly from \$51 billion in 2001 to \$145 billion in 2004. Let  $s$  be the online spending (in billions of dollars) at  $t$  years since 2000.**

Show all work and answer the questions in complete sentences where appropriate. **Round your answers to two decimal places.**

- a) Clearly define your variables and identify the independent and dependent variables.
- b) Find an equation of a linear model to describe the data.
- c) What is the slope? What does it mean in this situation?
- d) What is the  $s$ -intercept as an ordered pair? What does it mean in this situation?
- e) What is the  $t$ -intercept as an ordered pair? What does it mean in this situation? (Round to the nearest year.)
- f) Predict the total online spending in the United States in 2009.

**2. A batter hits a baseball ball into the air. The height  $h$  (in feet) of the baseball after  $t$  seconds is given by  $h = -16t^2 + 80t + 4$ .**

- a) Clearly define your variables.
- b) When is the baseball at a height of 104 feet? Explain why there is just one such time.
- c) When is the baseball at a height of 68 feet? Explain why there are two such times.
- d) How high is the baseball after 2 seconds?
- e) When is the baseball at a height of 110 feet?

**3. If 0.75 cup of Post Grape-Nuts Flakes cereal contains 4 grams of sugar, how many cups of that cereal contains 7 grams of sugar.**

- a) Translate and solve.
- b) Write your answer in a complete sentence.

**4. In 2003, Americans consumed an average of 16.3 pounds of fish and shellfish per year. What is this average in ounces per day?**

Show all work and answer in a complete sentence for full credit.

### Equivalent Units

#### Length

1 inch = 2.54 centimeters  
 1 foot = 12 inches  
 1 yard = 3 feet  
 1 mile = 5280 feet  
 1 mile  $\approx$  1.61 kilometers

#### Volume

1 cup = 8 ounces  
 1 quart = 4 cups  
 1 quart  $\approx$  0.946 liter  
 1 gallon = 4 quarts

#### Weight

1 gram = 1000 milligrams  
 1 pound = 16 ounces

#### Time

1 year  $\approx$  365 days

Math Lab Hours week of 5/18:

Tuesday: 2-3    Wednesday: 12:30-1:30    Thursday: 2-3