Mt. San Jacinto College
Spring 2006
Math 050, Mind Over Math
Section 1224, TTH, 1:00 - 2:20 PM, Room 1250A _____
Section 1231, TTH, 4:00 - 5:20 PM, Room 156 _____
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Final Examination
May 23, 2006

<u>You must show your work.</u> Answers without work shown will receive zero credit.
Calculators are not allowed to be used for this exam.
All answers are to be in simplified form.

1. (14 Points) Add $238 + 462 + 855$ and (6 points) check your sum for reasonableness by rounding to the nearest 10.

2. (14 points) Subtract 2,394 from 5,036 and (6 points) check your answer.

3. Add $\frac{3}{8} + \frac{7}{12}$.

4. Multiply $2\frac{3}{4} \cdot 3\frac{1}{5}$

5. (14 points) Divide $5\frac{3}{8} \div \frac{3}{4}$ and (6 points) check your answer.

6. (14 Points) Divide $0.213 \div 0.52$ and (6 points) round your answer to the nearest thousandth.

7. Simplify: $(15-13)^3 \div 2 - 2 + \left(\frac{1}{2} + \frac{1}{3}\right)$

8. What percent of 0.05 is 0.375?

9. A woman calculated that she needs to have a net annual income of $56,238 to meet her budgeted expenses and savings. If this represents 65% of her gross annual income (income before deductions), what is the least gross annual income that will meet her budget? Express your answer as a sentence.

10. (14 Points) A couple agrees to save for a luxury automobile that will cost $52,000, including taxes and license. The also agree that the amount each deposits into the account will be proportional to their mutual earnings. If he earns $39,000 per year and she earns $26,000 per year, and they agree that she will deposit $200 per month, how much will he deposit monthly? (6 points) How long will it take them to save for the total cost of car? Express your answers as sentences.

11. If a 2 liter solution (liquid) is 23% acid, how much pure acid is in the solution? Express your answer as a sentence.

12. The label on a can of mixed nuts makes the statement, "This can contains no more than 28% peanuts." If the contents of the can weigh 8 ounces, what is the most that the combined weight of the peanuts can be? Express your answer as a sentence.

13. (14 Points) A student in Mr. Ramirez's Math 050 class has an average midterm exam score of 77%. The student receives 86% on their term project and scores 79% on their final exam. If a student's semester score is the sum of 60% of the student's average midterm score, 20% of their term project score and 20% of their final exam score, what is the student's semester score if Mr. Ramirez rounds to the nearest percent? (6 points) What is the student's semester score if Mr. Ramirez rounds upward to the nearest percent? **Be sure to <u>show your work</u> and to write your answers in the form of sentences.**

14. Multiply: 2.36×0.426

15. Find the least common multiple (10 points) and the greatest common factor (10 points) of the numbers whose prime factorizations are $2^{17} \cdot 3^{23} \cdot 5^{10}$, $2^{25} \cdot 5^{16} \cdot 7^{9}$ and $3^{6} \cdot 5^{13} \cdot 11^{6}$. Obviously, you are not to multiply all the factors for the least common multiple, but you are expected to do so for the greatest common factor.

16. (6 points) Find the prime factorization of 28, 42 and 72. (6 points) Find the least common multiple of 28, 42 and 72. (6 points) Find the greatest common factor of 28, 42 and 72. (There are two bonus points for getting all three parts correct.)

17. (14 Points) Subtract $23\frac{7}{18} - 8\frac{12}{27}$ and (6 points) check your answer.

18. Solve the proportion: $\frac{7}{8} = \frac{56}{n}$

19. How many hours per day, six days per week, have been recommended for homework for the following classes? (4 Points Each)

    a. Math 051, Prealgebra: _____
    b. Math 090, Elementary Algebra: _____
    c. Math 096, Intermediate Algebra: _____
    d. Math 105, College Algebra: _____
    e. Math 110, Precalculus: _____
    f. Math 211 – 213, The Calculus Series: _____

Extra Credit: A man and woman agree to split all expenses based on their incomes after they are married. Her annual income is $42,000 and his is $30,000. If their monthly mortgage payment is $1,600, how much does each pay each month toward the mortgage?