

EXAM I

MAT092 · SUMMER 2008

Problem 1. Evaluate the following expressions without the use of calculator. You must show all work to get full credit. 24 pts

- (a) $42 \div 3 + 4$
- (b) $10 - (12 - 3 \cdot 2) \div 3$
- (c) $4 + 8 \div 2 \cdot 3 - 9$
- (d) $20 - 12 \cdot 2^{-2} \div 3 \cdot 3^2$
- (e) $-3 - (-5)$
- (f) $(-3)(4)(-5)$
- (g) $\frac{1}{4} \cdot (-\frac{8}{10})$
- (h) $-3 - 10 \div (-2)$

Problem 2. You must take medicine in four equal doses each day. One day's worth of medicine comes in a single container and measures $3\frac{1}{5}$ tablespoons. How much medicine is in each dose? 24 pts

Problem 3. The following number are written in standard notation. Convert each number to scientific notation to 3 significant figures. 24 pts

- (a) 353
- (b) 46236
- (c) 4,523,454,524
- (d) 0.0104542
- (e) 0.000000100452454

Problem 4. You would like to learn to play the harp but are concerned with the time constraints. A friend of yours plays, and for three consecutive days before a recital, she practices $1\frac{1}{4}$ hours, $2\frac{1}{2}$ hours, and $3\frac{2}{3}$ hours. What is her total practice time before a recital? 24 pts

Problem 5. Your new car costs \$22,500. Suppose the dealer offer a 10% discount, and the state sales tax rate is 8.4%. How much will you pay on the car? 24 pts

Problem 6. Suppose you work at Burger World part-time. You work a total of 25 hours per week at \$8.00 an hour. Your daily commute is 50 miles per week. The price of gas is \$4.50 per gallon. Suppose the average mileage of a compact car is 30 mile/gal and for the SUV it is 14 mile/gal. What percentage of your income goes toward paying for gas per week for the sedan and for the SUV, respectively? If the price of gas doubles, what percentage of your income goes toward paying for gas per week for the compact car and for the SUV, respectively? Is it less expensive to own the SUV? 80 pts

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