

Instructions for Resubmissions of Exam #2

- Corrections to the exam will be due on Tuesday October 10, 2006 (NO EXCEPTIONS).
 - The corrections will be worth the standard 10 point quiz grade.
 - Students who do not turn in corrections will receive the same percentage grade as their original exam 2 score.

- Bonus credit will be awarded as follows:
 - Each student **MUST** attend office hours or schedule an appointment with the instructor.
 - The student will be required to explain their answers to some randomly chosen problems on the exam.
 - The deadline for this meeting will be Friday, October 20, 2006.
 - The bonus credit will be to **AVERAGE** your original exam score with the corrections; for example a score of 60 on the original exam and 90 on the corrections will average out to a new grade of 75 provided the student can adequately explain their answers.

Instructor's General Observations

- I can count on one hand the number of email questions and office visits I've received.
- I can count using one finger the number of bonus question submissions I've received.

- The only way for you to learn this material is to practice and ask questions.
- Our class period does not provide adequate time for most students to learn the material.
- Homework must be completed and understood.

- If there is even a single part of a single problem that you do not understand, then you **MUST** ask the question.

Resubmissions DUE October 10, 2006

Directions: Please read all questions carefully. Answer all parts of each question. Please circle or box your final answers. Show all work and justify all answers for full credit. Partial credit is always given for correct methods, partial correct calculations, and correct justification (rules, definitions, etc). Point values for each question are indicated in parentheses. **The exam has 105 pts but will be scored out of 100.** Good luck.

1) (10pts each) **Simplify** the following expressions by canceling all factors other than 1 and -1.

a.
$$\frac{14 - 19x - 3x^2}{3x^2 - 23x - 14}$$

b.
$$\frac{8 + \frac{6}{x} - \frac{5}{x^2}}{4 - \frac{3}{x} - \frac{10}{x^2}}$$

c.
$$\frac{\frac{x}{3x-2}}{\frac{x}{9x^2-4}}$$

- 2) (10pts) State the **domain** of the following rational function.

$$f(x) = \frac{3x^2 + 10x - 8}{8 - 14x + 3x^2}$$

- 3) (10pts) Solve the rational equation by finding all solutions for x.

$$\frac{6}{x-3} - \frac{1}{x+3} = \frac{51}{x^2-9}$$

4) (10pts each) **Perform the operation** and **simplify** the resulting expression.

a.
$$\frac{3}{2x-3} + \frac{2x}{3-2x}$$

b.
$$\frac{x^2 + x - 6}{x^2 - x - 2} \div \frac{x^2 + 2x - 3}{1 - x^2}$$

- 5) (10pts) An electrician requires 12 hrs to wire a house. His apprentice can wire a house in 16 hrs. After working alone on the job for 4 hours the electrician quits, and his apprentice finishes wiring the house. How long does it take the apprentice to finish the task?

Recall the formula, $(\text{Rate of Work}) \times (\text{Time Worked}) = (\text{Part of Job Completed})$.

- 6) (10 pts) A motorist drove 72 miles before running out of gas and walking the 4 miles to the gas station. The driving rate of the motorist was twelve times the walking rate. The total time spent driving and walking was 2.5 hrs. Find the **rate** at which the motorist **drives**.

Recall the formula, $(\text{Distance}) \div (\text{Rate/Speed}) = (\text{Time})$.

7) (10pts) The dividend paid for ownership of Bank of America stock (ticker symbol BAC) is directly proportional to the number of shares owned. If a shareholder is paid \$450 for owning 200 shares of BAC, how many additional shares of stock must they purchase to earn \$1012.50 in dividends?

8) (5pts) The literal formula $A = P + Ptr$ is used in business to calculate the amount of money in an account A based on the principle, P , interest rate, r , and time, t , that money is in a simple interest bank account. **Solve this equation for the variable P .**