MA 111   Exam 3   Spring 2000

Name: _____

Student ID: _____

Instructor: ## Delworth

Class Hour: _____

INSTRUCTIONS:

(1) There is no credit for guessing. You must show your work to receive credit!

(2) Please fill in all the above information and write your name on the top of each of the 4 exam pages.

(3) The point value on each problem appears to the left of the problem.

(4) You must show sufficient work to justify all answers. Correct answers with inconsistent work may not be given credit.

(5) No partial credit will be given on problems 1-3. Partial credit may be obtained on problems 4-9 provided sufficient work is shown.

(6) Circle the letter of the correct answer in problems 1-3, and write the answers to problems 4-9 in the space provided.

(7) No books or paper are allowed. Calculators may be used where appropriate.

(8) The exam is self-explanatory. Please do not ask the instructor to interpret any of the exam questions.

Page	Points	Max Possible
1		24
2		30
3		22
4		24
Total		100

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Circle the correct answer to problems 1-3. <u>You must show work to receive credit</u>.

(8 pts.)   1.   Add and simplify completely.

$$3 + \frac{x-5}{x+2}$$

A. $\dfrac{4x+1}{x+2}$

B. $\dfrac{x-2}{x+2}$

C.   -1

D. $\dfrac{6x-13}{3x+6}$

E. $\dfrac{4x-3}{x+2}$

(8 pts)   2.   Find the remainder when $\left(x^3 - 3x^2 + 2x - 1\right)$ is divided by $(x-4)$.

A. $\dfrac{23}{x-4}$

B. $\dfrac{-25}{x-4}$

C. $\dfrac{7}{x-4}$

D. $\dfrac{-9}{x-4}$

E.   None of these

(8 pts.)   3.   Perform the operation and simplify completely.

$$x^{\frac{3}{4}} \cdot x^{\frac{1}{4}} \cdot x^{\frac{3}{8}}$$

A. $x^{\frac{3}{8}}$

B. $x^{\frac{11}{8}}$

C. $x^{\frac{9}{128}}$

D. $x^{\frac{9}{16}}$

E. $x^{\frac{3}{16}}$

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Place your answers in the spaces provided. <u>You must show your work to receive credit.</u>

(12 pts.)   4.   Factor completely.

(6 pts.)   a. $5x^5 - 45x^3 + 3x^2 - 27$

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(6 pts.)   b. $36y^4 - 49z^6$

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(18 pts.)   5.   Solve for all values of x. Check your answers.

(8 pts.)   a) $5x^2 = 3x$

x = [   ]

(10 pts.)   b) $\dfrac{5}{x} + \dfrac{x}{x+1} = \dfrac{1}{x^2 + x}$

x = [   ]

Name: _____

Place your answers in the spaces provided. <u>You must show your work to receive credit</u>.

(12 pts.) 6. Perform the indicated operation and simplify completely. Assume all variables represent positive values. Do not leave negative exponents in any answer.

(6 pts.) a. $\left(\sqrt{3x^5}\right)\left(\sqrt{6x^2}\right)$

(6 pts.) b. $5\sqrt{12} - 2\sqrt{27} + 3\sqrt{48}$

(10 pts.) 7. Perform the indicated operation and simplify completely.

$$\frac{3x - 2}{x^2 - 2x - 3} \div \frac{6x - 4}{5x^2 + 3x - 2}$$

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Place your answers in the spaces provided. <u>You must show your work to receive credit</u>.

(12 pts.)   8.   A rectangle is 10 cm longer than it is wide. Find the length and width of the rectangle if the area is 56 cm^2. Name a variable(s), set up an equation(s) and solve.

width =

length =

(12 pts.)   9.   The speed of car A is 16 miles an hour slower than the speed of car B. If car A travels 196 miles in the same time it takes car B to travel 252 miles, find the speed of each car. Name a variable(s), set up an equation(s) and solve.

Speed of car A =

Speed of car B =