MA 111 **EXAM 3** **SPRING 2003**

Name: _____

Student ID: _____

Instructor: _____

Section Number: _____ **Class Time:** _____

Instructions:

(1) Please fill in all the above information.

(2) You must use a #2 pencil on the answer sheet.

(3) On the answer sheet, fill in:
   a) Your last name, first name and middle initial **and** blacken the appropriate spaces.
   b) Your division and section number **and** blacken the appropriate spaces.
   (If you do not know your division and section number, ask your instructor.)
   c) Your student identification number **and** blacken the appropriate spaces.
   d) Leave the test/quiz number blank.
   e) Sign your name.

(4) **Make sure that the cover of this exam matches the color of your answer sheet.**

(5) There are 15 questions. On the answer sheet, blacken your choice of the correct answer in the spaces provided for questions 1-15. Do all of your work on the question sheets. Turn in the answer sheet when you leave and keep the question sheet. **Only the answer sheet will be graded.**

(6) All questions are worth the same. Please answer every question. No points will be deducted for wrong answers.

(7) **No calculators are allowed.**

(8) The exam is self-explanatory. **Do not** ask an instructor questions about any of the exam problems.

1) Solve. $|x+3|-2=8$

A. $\{3\}$

B. $\{-9,7\}$

C. $\{-13,7\}$

D. $\{-13,3\}$

E. $\{7\}$

2) Multiply. $-5a^3b\left(4a^3-a^2b^2+b^3\right)$

A. $-20a^9b+5a^6b^2-5a^3b^3$

B. $-20a^6b-5a^5b^3-5a^3b^4$

C. $-20a^9b-5a^6b^2-5a^3b^3$

D. $-20a^6b+5a^5b^3-5a^3b^4$

E. $-20a^6b-5a^5b^2-5a^3b^3$

3) Solve. $x-(4x+1)\geq 3(x-2)+8$

A. $\left(-\infty,-\frac{1}{2}\right]$

B. $\left[-\frac{5}{6},\infty\right)$

C. $\left[-\frac{1}{6},\infty\right)$

D. $\left(-\infty,-\frac{1}{6}\right]$

E. There is no solution.

4) Telecom charges \$12 per month for basic phone service and 8 cents per minute for all long distance calls. For what numbers of long distance minutes will a phone bill be under \$30?

A. less than 23 minutes

B. less than 525 minutes

C. less than 350 minutes

D. less than 375 minutes

E. less than 225 minutes

5) Total profit is defined as total revenue minus total cost. If the total revenue from the sale of dishwashers is $R(x)=250x-0.3x^2$ and the total cost is $C(x)=1500+0.4x^2$, find the profit from the sale of ten dishwashers.

A. \$1100

B. \$930

C. \$993

D. \$986

E. \$1010

6) Multiply. $(4y-1)(3y+5)$

A. $12y^2-5$

B. $12y^2+17y-5$

C. $12y^2+20y+5$

D. $12y^2+11y+5$

E. None of these.

7) One factor of $w+2w^2-15$ is:

A. $w-5$

B. $2w-3$

C. $2w+5$

D. $w-3$

E. $2w-5$

8) Factor completely. $m^2z^2+6mz^2+9z^2$

A. $z^2(m+1)(m+9)$

B. $z^2(m+3)^2$

C. $mz(mz+6z+9z^2)$

D. $z^2(m+6)(m+9)$

E. None of these.

9) One factor of n^6-16p^2 is:

A. n^3-8p

B. n^2+8p

C. n^2-4p

D. n^3+4p

E. n^3-16p

10) Solve. $x^2-11x=12$

A. $x=-1,\ x=12$

B. $x=-11,\ x=12$

C. $x=-12,\ x=1$

D. $x=0,\ x=11$

E. $x=12,\ x=23$

11) A vegetable garden is to be 5 feet longer than it is wide. The garden will have an area of 644 square feet. Set up the equation needed to determine the width of the garden. Let x represent the width of the garden. Do not solve.

A. $2(x)+2(x+5)=644$

B. $x+(x+5)=644$

C. $x^2+5x=644$

D. $x^2+5=644$

E. $x(5x)=644$

12) Multiply and simplify.

$$\frac{x^2-2x-15}{x^3-5x^2}\cdot\frac{x^3}{x^2-9}$$

A. $\dfrac{x-5}{-5x^2(x-3)}$

B. $\dfrac{-2x-15}{45x^2}$

C. $\dfrac{-2x+3}{x^2-9}$

D. $\dfrac{x}{x-3}$

E. None of these.

13) Subtract and simplify. $\frac{m}{m+4}-\frac{2}{m-1}$

A. $\frac{m-2}{(m+4)(m-1)}$

B. $\frac{m-2}{5}$

C. $\frac{m^2-3m+4}{(m+4)(m-1)}$

D. $\frac{-m-8}{(m+4)(m-1)}$

E. $\frac{m^2-3m-8}{(m+4)(m-1)}$

14) Solve. $\frac{5x}{x-2}=\frac{3}{x-2}+1$

A. $x=\frac{1}{6}$

B. $x=2$

C. $x=\frac{3}{5}$

D. $x=\frac{1}{4}$

E. There is no solution.

15) Evan rides his bike 5 mph faster than Jake can travel on his skates. Evan can ride 21 miles in the same time it takes Jake to skate 6 miles. How fast does Jake skate?

A. 2 mph

B. 3 mph

C. 1 mph

D. 7 mph

E. None of these.