Math 111, Spring 2009 Final Exam

Name (print)_____

Instructor's name_____

Directions

1. Time limit: 1 hour 50 minutes. Each test should have 8 **pages**. Points for each problem are to the right of the blank.

2. To receive credit on any problem, you must **show work** that explains how you obtained your answer or you must explain how you obtained your answer.

3. Write your work in ***pencil*** in the provided spaces. Your work must be neat, organized, and legible. Place answers on the line to the right of the problem.

4. You may use a calculator, but you may not use any notes, books or other sources. You can not share a calculator with another student. You may *not use a cell phone, PDA, etc.* * Work must be shown.

5. If a problem does not specify that an answer be written in fraction notation, mixed number notation, or decimal notation, then write the answer in the notation that you think is most appropriate for the problem. ***All numerical fractions must be expressed in lowest terms.***

6. You are expected to do your own work. You are neither to receive nor to give any help on the exam.

7. Please write your name on the first and second pages.

I have read the directions.

Signature_____

Spring '09 Math 111 Final Exam Name_____

(3 points each)

1a. Combine like terms. $8-(-4a)-9b+7a+3b-15$

1a._____

b. Divide and simplify. $(-360n)\div\frac{27n}{8}$ b._____

Simplify each of the following expressions.

c. $2^3+8(7)-(7-1)^2\div 4$

c._____

d. $\frac{32.87+(0.2)^2}{-0.01}$ d._____

e. Calculate and write the result as a decimal rounded to hundredths.

$3.65+\frac{3}{4}(0.864)$ e_____

1 f. Fill in the blank with $=$, $<$, or $>$. $\frac{3}{4}+\frac{2}{3}$ _____ $\left(\frac{5}{6}\right)\div\frac{4}{5}$

f._____
(3 points)

2 **Solve the equations** (4points each)

a. $2x-7=-23$ 2a._____

b. $9+2(x-3)=5x+6$ b._____

c. $\frac{5}{6}+\frac{2}{3}a=\frac{2}{9}$ c._____

d. $2.9x-2.24=-17.9$ d._____

3. Find the prime factorization of 588. 3._____
(3points)

4a. Evaluate. $|6b| - 5a$ for $a = 10$ and $b = -3$ 4a._____
(2 points)

b. Evaluate. $\frac{2x + y}{x^2 - 49}$ for $x = 7$ and $y = -9$ 4b._____
(2 points)

c. Evaluate. $5x^3 - 3x + 6$ for $x = -1$ 4c._____
(2 points)

5. John is buying a car for $25,000 and will make a down payment of 18% of the cost of the car, he will borrow the rest. a. What is John's down payment? b. How much will he have to borrow?
5. a _____
(2 points)

b._____
(1 point)

6. If your car traveled 380 miles on $14\frac{7}{10}$ gallons of gas, how many miles per gallon did it get? Round your answer to the nearest hundredth.

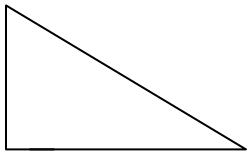
6._____
(3 points)

8. In triangle ABC, the measure of angle A is 59° and the measure of angle B is 62° . Find the measure of angle C.

7._____
(3 points)

8. Find the area of the right triangle below.

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



$7\frac{1}{3}$ m.

8_____
(3 points)

9. Jim is going to fence in his yard, represented by the picture below, with chain link fencing.

a. How much fencing should he order? b. If he needs to order the fencing in feet, how many feet of fencing should he order?

21.8 yd.

7.5 yd.

9a._____
(2 points)

b._____
(1 points)

10a. Subtract the polynomials $(3x^4 - 6x - 5x^2 + 5) - (6x^2 - 4x^3 - 1 + 6x)$ 10a_____
(3 points)

b. Multiply $3a(5a^2 - 2a + 4)$ b._____
(3 points)

c. Multiply $(y - 5)(3y + 2)$ c._____
(3 points)

d. Multiply. Your answer should have *positive* exponents. Assume variables are nonzero.
$(-8a^3b^{-6})(5a^2b^2)$

d. _____
(3 points)

11. Jason got a 75 on a math test. He was allowed to go to the math lab and take a retest. He increased his score to 84. What was the percent of increase?

11._____
(3 points)

12a. Write $\frac{5}{8}$ as a decimal _____write as a percent_____
(3 points)

b. Write 460% as a decimal _____write as a fraction_____
(3 points)

13. Fill in the blank at the right of each equation with the number of the correct property. (4 points)

I. Distributive Property	IV Identity Property for Multiplication
II Commutative Property of Addition	V Inverse Property for Multiplication
III Associative Property of Addition	VI Commutative Property of Multiplication

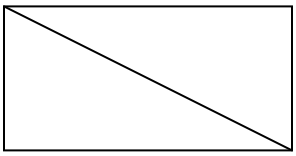
a. $5(9x) = (9x)(5)$ _____

b. $8(x + 4y) = 8x + 32y$ _____

c. $\frac{6}{5}(1) = \frac{6}{5}$ _____

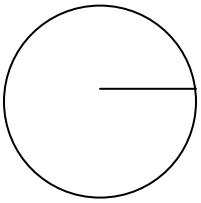
d. $6 + (3 + 5) = (6 + 3) + 5$ _____

14. A plasma television has a rectangular screen that measures 42 in. diagonally. The width of the television is 32 in, find the height of the television. (round to the nearest tenth of an inch)



14._____
(3 points)

15. An earth quake was felt by people 900 km away in all directions from the epicenter, (which is the source of the earthquake and the center of the circle). How much area was affected by the quake?
(use 3.14 for π) .



r = 900 km

15_____

(3 points)

16. A painter needs to estimate the height of a condominium. He estimates the length of his shadow to be 7 feet long and the length of the building's shadow to be 42 feet long. Find the height of the building if the house painter is $5\frac{1}{2}$ ft. tall

6._____

(3 points)

17. a. In which quadrant is each point located? (2 points)

$(-6, 3)$ _____

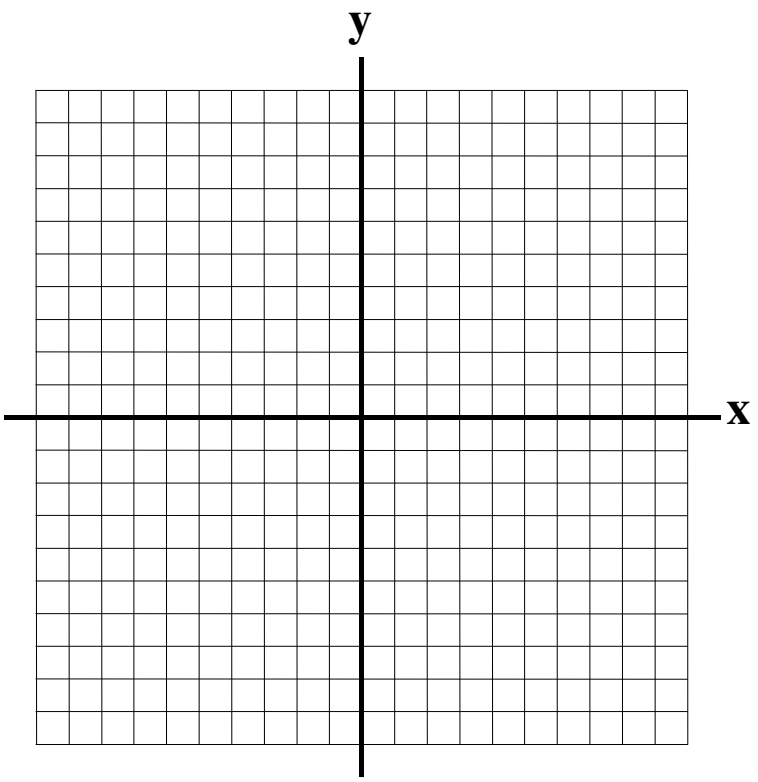
$(3,-5)$ _____

17b. Determine whether the ordered pair $(1,7)$ is a solution to the equation $5x + 2y = 19$.

17._____
(1 point)

18. For the equation $y = -2x + 7$, complete the table below, then graph the equation in the rectangular coordinate system. Label each of your ordered pairs on the graph.
(2 points) (3 points)

x	Y	(x,y)
-1		
0		
	3	



THE END!