

NOTICE: This Material May Be Protected By
Copyright Law (Title 17, U.S. Code)

Mathematics 095
Semester One, 2006-2007
19 December 2006

FINAL EXAMINATION

Instructor _____

Student _____

Student _____

Problem	Points possible	Points earned
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
11	20	
12	20	
13	20	
14	20	
15	20	
	Total 200	Total

- Show your work. Even if your answer is correct, if you do not show your work, you will receive zero credit.
- No calculators of any kind.
- No notes.
- No textbooks.
- No interacting student-to-student.

I. True/False. Following these instructions, there are four statements. For each statement, if the statement is true, write the word True in the space provided at the left of the statement; otherwise, if the statement is not true, write the word False in the space provided at the right of the statement. (If you write the word True in some space at the right, you will be given zero credit; similarly, if you write the word False in some space provided at the left, you will be given zero credit.) (10 points each.)

True

False

- _____ 1. Suppose that we are given the system of equations $3x + 4y = 11$ and $5x - 6y = -7$. Then, the solution is $(5, -1)$, because, if, in the equation $3x + 4y = 11$, we put $x = 5$ and $y = -1$, we get 11. _____
- _____ 2. $4x - 2y = -2$ is the equation of some specific line in the rectangular coordinate system, and the slope of that line is 4, the coefficient of the variable x . _____
- _____ 3. $3x - 5y = 11$ is the equation of some specific line, call it L . Any line perpendicular to L will have slope $m = -5/3$. _____
- _____ 4. The relation $\{(1, 2), (2, 3), (3, 2), (4, 2)\}$ is not a function, because it is not true that no two of the ordered pairs in the collection have the same second coordinate. _____
- _____ 5. We purchased a CD player on sale at a 35% discount. The list price was \$450.00. So, the amount of the discount was \$157.50. _____

II. Completions. Following these instructions, there are five incomplete statements. For each such statement, in the space provided, put the letter corresponding to what you think is the correct answer. (10 points each.)

6. $y = -3x + 4$ is the equation of some specific line, call it L, in the rectangular coordinate system, and the x-intercept of L is _____.
- (a) -3 (b) $\frac{3}{4}$
(c) $\frac{4}{3}$ (d) 4
7. Suppose that we are given the system of equations $2x - y = -8$ and $-x + 2y = 10$. The solution of that system will be some specific ordered pair, and, as a point in the rectangular coordinate system, that ordered pair is located in quadrant _____.
- (a) I (b) II
(c) III (d) IV
8. Suppose that we are given the system of equations $5x + y = 26$ and $3x + 2y = 10$. Then, when it is written as an ordered pair, the solution is _____.
- (a) (5, 1) (b) (-6, 4)
(c) (-6, -4) (d) (6, -4)
9. Suppose that we are given the collection of entities $\{(1, 3), 1, (10, 2), (3, 15)\}$. Then, that collection is _____.
- (a) a function but not a relation (b) a relation but not a function
(c) both a function and a relation (d) neither a function nor a relation
10. We deposit \$1500 into an account earning $7\frac{3}{4}\%$ simple interest. At the end of three years, the amount in our account will be _____.
- (a) \$1848.57 (b) \$1848.75
(c) \$1884.57 (d) \$1848.75

III. Computations. (20 points each.)

11. Suppose that, in the rectangular coordinate system, we are given the two points (2, 3) and (4, 1). Then, there exists a unique line, call it L, passing through those two points. Write an equation for the line L. Write an equation for the line parallel to L and passing through the point P(5, 6). And, write an equation for the line perpendicular to L and passing through the point Q(-1, -2).

Equation line L _____

Equation line parallel to L through point P _____

Equation line perpendicular to L through point Q _____

12. Solve this system of two equations in two unknowns. $7x + 5y = 7$ and $-3x - 4y = 1$.

$x =$ _____

$y =$ _____

13. Suppose that we are given the relation $\{(3, 7), (5, 5), (9, 5), (3, 8), (7, 5)\}$.

Domain of the relation _____

Range of the relation _____

Function, yes or no? _____

14. We have purchased a used car for \$1571.15. When we made the purchase, we were given a 33% discount. So, what was the original price of the car?

Original price _____

15. Find the rate of interest such that, if we deposit \$5,050 into an account earning simple interest, then, at the end of eight years, we will have \$10,100 in our account.

Rate of interest _____