

QUESTION	1(a)	1(b)	2	3	4	5	6	7	8	9	10	11	12	Total
POSSIBLE PTS	4	4	8	8	8	8	8	8	8	8	8	10	10	100
PTS AWARDED														

MAP 103: Proficiency Algebra

Exam 1, Spring 2007

WEDNESDAY, FEBRUARY 21, 8:30PM - 10:00PM

Directions: Do not turn this page over until you are directed to do so. Please fill in your name and your Stony Brook ID number on the lines below. Please then circle the lecture you belong to in the chart below. Finally, you also must read and sign the declaration below *in pen*.

There are a total of 5 pages to this exam, not including the cover sheet. Be sure to have all of them. There are 12 questions on this exam, and a possible total of 100 points one can earn on this exam. Credit vales for each question are shown in brackets to the right of the question number. You may use pencil to show work, but all final answers must be written *in pen* on the answer line for each question, all the way to the right of the page. In problems that say “show all work” at the end of them require that you show work for full credit. In these problems, even correct answers with no supporting work will receive *no credit at all*. In problems that do not say “show all work”, only your final answers will be marked.

You may not leave the exam room until 9:00pm at the earliest. You may *not* use a calculator or any other electrical device for this exam. You may not consult any outside resources, including fellow test-takers, notes, and textbooks. You will also not receive any information from the proctors regarding the wording of any of the exam questions.

Name: _____ Student ID#: _____

LECTURE	TIME	PLACE	INSTRUCTOR
LEC 1	MWF 9:35am-10:30am	Harriman 115	Kuefner, Danielle
LEC 2	MWF 10:40am-11:35am	Harriman 115	Kuefner, Danielle
LEC 3	MWF 11:45am-12:40pm	Harriman 115	Miller, Christopher
LEC 4	TuTh 9:50am-11:10am	Library N4006	Bianculli, Nick
LEC 5	TuTh 2:20pm- 3:40pm	Earth and Space 177	Gelbord, Todd
LEC 6	TuTh 6:50pm- 8:10pm	Harriman 115	Marley, Elise

DECLARATION

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination and that I have neither given nor received assistance in answering any of the questions during the examination.

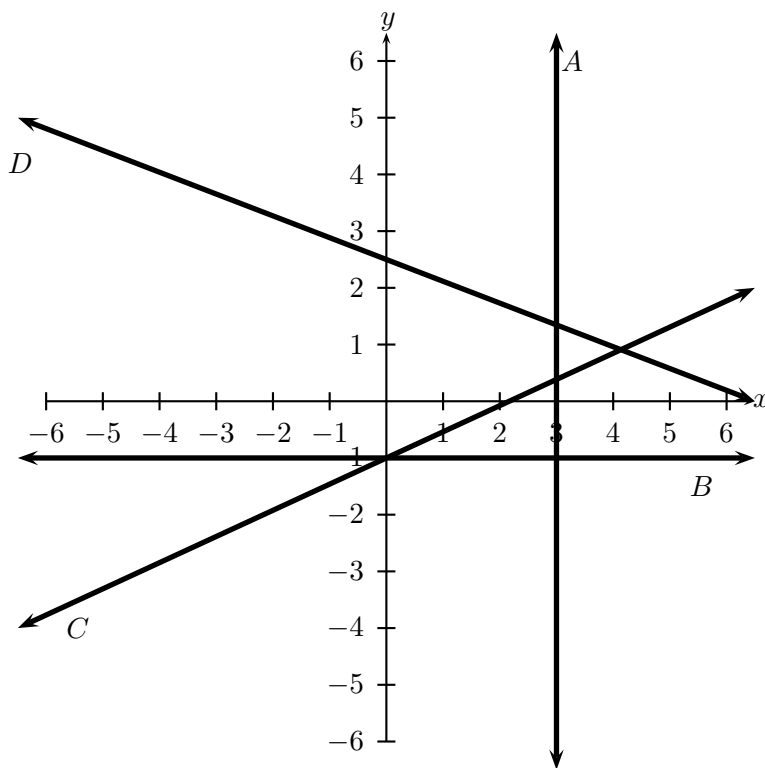
Signature: _____

1. [8 points total; 4 points each] Fill in the blanks in the following paragraph with the correct mathematical terms:

Nick is trying to solve the equation $2(x - 3) = 9$ for x , and he starts by noticing that $2(x - 3) = 2x - 6$, which is a consequence of the (a) _____ property/law. Nick then adds 6 to both sides of the equation, since -6 and 6 are (b) _____ of each other.

1(a). _____ 1(b). _____

2. [8 points total; 2 points each] There are four lines in the graph below, each labeled A , B , C , or D . Match each line with its slope from the chart. Place the letter of the line that has that slope in the box directly to the right of the correct slope.



2.

SLOPE	LINE
0	
undefined	
$-\frac{5}{13}$	
$\frac{6}{13}$	

3. [8 points] Find the value of $\frac{a - b\sqrt{c-d}}{a-b}$ if $a = 2, b = -1, c = 20$ and $d = 4$. Show all work.

3. _____

4. [8 points] The average fire ant is 4.55×10^{-3} meters in length. Write this quantity in standard notation. *Show all work.*

4. _____

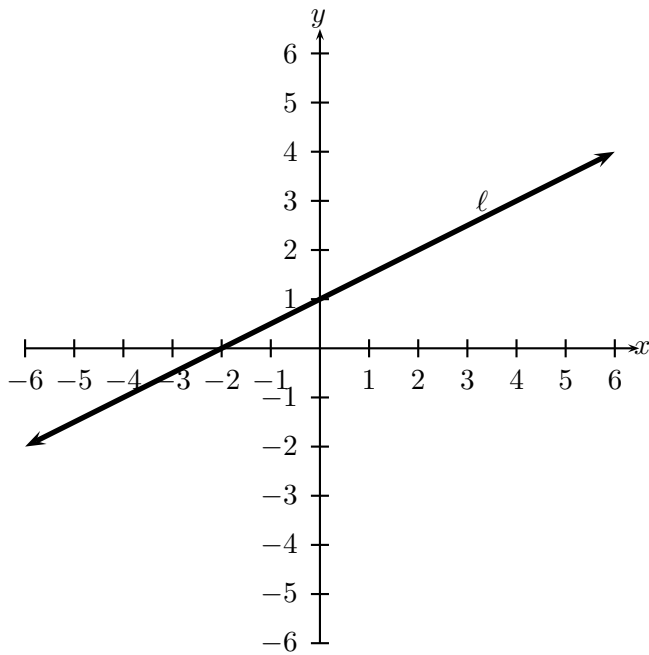
5. [8 points] Simplify the expression $\frac{x^4x^{10}x^{-5}}{x^6x^{-3}}$ when $x \neq 0$. *Show all work.*

5. _____

6. [8 points] Simplify the expression $\left(\frac{2x^2}{z^{-3}}\right)^{-2}$ when $x, z \neq 0$. Write your final answer using only positive exponents. *Show all work.*

6. _____

7. [8 points] Below, line ℓ is pictured. Find an equation of line ℓ . *Show all work and/or explain your answer.*



7. _____

8. [8 points] Solve for x : $-2(3x - 2) - 3x = -4(2x - 3)$. *Show all work.*

8. _____

9. [8 points] Solve for d in the equation $a + b = 2(c - d)$ in terms of a , b , and c . *Show all work.*

9. _____

10. [8 points] Find three numbers such that the second is two less than one-half the first, the third is twice the second, and the sum of the three numbers is 14. *Show all work.*

10. _____

11. [10 points] Find the solution set for the inequality $4(5 - 2x) \geq 40$. Graph the solution set on the number line below and write the solution set in interval notation on the answer line. *Show all work.*

11.  interval notation _____

12. [10 points] Find the $y = mx + b$ form of the equation of the line that meets the following criteria:

- The line is perpendicular to the line given by the equation $4x - 2y = 9$.
- The line passes through the point $(2, 1)$. *Show all work.*

12. _____