LEHMAN COLLEGE THE CITY UNIVERSITY OF NEW YORK
250 Bedford Park Boulevard West Bronx, New York 10468-1589

MEMORANDUM

To: MAT 104 Students
From: R. Sutliff, Director MCSLC

Date: September 8, 2011
Re: MAT 104 Final

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1) There will be a departmental final exam for MAT 104. Passing score is 9 out of 15 problems answered without any errors. If a student does not pass the departmental final, they cannot pass the course. A make-up final exam will be available.

2) A sample of the departmental final is on the reverse of this memo. More copies are available in the Math & Computer Science Office Gillet 211..

3) Calculators are not permitted for the departmental final.

4) To go on to MAT 171 or MAT 172, you must have a grade of C or better in MAT 104.

MAT 104 **SAMPLE EXAM**

1. Solve for x: $7 - 3x \geq 31$

2. Write an equation of the line through (3, -4) and perpendicular to the line $6x + 2y = 9$.

3. Multiply and combine like terms: $(x^2 - 4x + 7)(x + 3)$.

4. Combine and simplify, using positive exponents only: $(-4a^{-2}b^3)^{-3}(8ab)^2$

5. Write .00000000405 in scientific notation.

6. Factor completely: $24x^4 - 54x^8$.

7. Solve for x. Leave your answer in radical form: $x^2 - 4x = 3$.

8. Combine into a single fraction: $\dfrac{x+6}{x^2+x-20} - \dfrac{3}{x-4}$

9. Divide and simplify your answer: $\dfrac{x^2+x-6}{10x^2} \div \dfrac{x^2-9}{2x^8}$

10. Simplify: $\dfrac{\dfrac{1}{x^2} + \dfrac{5}{x} + 6}{2x+1}$.

11. Solve for x: $125^x = 25^{(x+2)}$

12. If $f(x) = 3x - x^2$, find the value of f(-3).

13. Find the vertex of the parabola $y = 4x + x^2$.

14. A ladder 18 feet long leans against a wall. The foot of the ladder makes an angle of 65° with the ground. How far up the wall will the ladder reach? (sin 65° = .91, cos 65° = .42 and tan 65° = 2.14)

15. Simplify: $\dfrac{\log_4 8}{\log 1000}$.