BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 03 — Exam 2
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Directions: Write your answers in one or more of the provided booklets. To get full credit you *must* show all your work. Simplify your answers whenever possible. Be certain to indicate your final answer clearly. **This exam is due on Tuesday, April 21 at 2:00 PM**

1. Evaluate: $-5 - 6(2 - 3) + 7$
2. Evaluate: $-3^2 + 2(8 - 5)^2 - 3(11 - 8)$
3. Evaluate: $-2x + 3y$ if $x = -2$ and $y = 7$.
4. Evaluate: $-\frac{2}{9} \cdot \frac{3}{4} \left(-\frac{10}{5} \right)$
5. Evaluate: $\frac{2s - tx^2}{s - 2}$ if $s = 3$, $t = 5$ and $x = -2$.
6. If c is given by the formula
$$c = \sqrt{a^2 + b^2}\,,$$
find c if $a = -5$ and $b = 12$.
7. Simplify: $(x^2y^3)^2(xy)^3$.
8. Simplify: $\frac{-8x^6y^9}{24x^5y^4}$.
9. Expand and simplify: $(x - 4)(x + 6)$.
10. Expand and simplify: $(x + 3)(x + 5)$.
11. Expand and simplify: $(2x - 3)^2$.
12. Expand and simplify: $(2x - 3)^3$.
13. Expand and simplify: $(3x - 5y)(x - 2y)$.
14. Expand and simplify: $(x + 1)(x^2 - x + 1)$

15. Expand and simplify: $(2x+5)(2x-5)$

16. Divide $\dfrac{4x^5y^4 - 8x^2y^2 + 10xy^2}{2xy^2}$.

17. Divide $\dfrac{6x^5 + 3x^4 - 9x^2 + x - 12}{3x}$.

18. Solve: $7x - 3 = 3(x-5)$

19. Solve: $3(2-3x) - 4 = -2(4x-5) - x$

20. Solve: $\dfrac{5x}{3} = \dfrac{x+7}{2}$.

21. Solve: $\dfrac{2x-4}{3} + 5 = \dfrac{5x+2}{4} + 2$

22. Find a if all real numbers are solutions to the equation $2(5x-4) = 5(2x+2) + a$.

23. Find five solutions of the equation $3y - 2x = 18$

24. Complete the following table in such a way that all resulting pairs (x, y) are solutions of the equation $2x - 3y = 8$.

x	y
0	
	0
-1	
	2
	-5
3	
	-6
2	

25. Find a linear equation with two variables that has $(-1, 2)$ as a solution.

26. Solve for y: $3x - 4y = 12$.

27. Solve for x: $5x - 2y = 7$

28. Find m if $(1, -3)$ is a solution of the equation $y = mx - 7$.

29. Find b if $(2, 3)$ is a solution of the equation $y = \dfrac{4}{3}x + b$

30. Find m and b if both $(0, 4)$ and $(-1, 3)$ are solutions of the equation $y = mx + b$.

    Hint. Use the first solution to find b and then the second to find m.