BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 03 Exam 1
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Directions: Write your answers in the provided space. To get full credit you *must* show all your work. Simplify your answers whenever possible. Be certain to indicate your final answer clearly. **Each problem is worth** 5 **points**

1. Evaluate: $7 - (4 - 7)^2$

2. Evaluate: $5 - 3(4 - 3) - 2^3 \div 8 \cdot 4.$

3. Evaluate: $\dfrac{-3^3 + 27}{(-5)^2 + 25}$

4. $0 - (-(-(-(-3))))$

5. Evaluate: $\sqrt{-3^2 + 2^3 + 1}$

6. Evaluate: $\dfrac{-16}{9} \cdot \dfrac{18}{-25} \cdot \left(-\dfrac{10}{6}\right) \cdot \dfrac{-5}{4} \cdot \dfrac{3}{4}.$

7. Evaluate, if $a = -3$ and $b = 5$: $-a + (-b)^2$

8. Evaluate if $x = -3$, $y = 2$: $\dfrac{y - x}{4x + y}$

9. Evaluate if $a = -2$, $b = -3$, $x = 5$: $ax - b(2a + 3x)$

10. Evaluate if $x = -5$, $y = -4$: $(x + y)^2 - x^2 - y^2 - 2xy$

11. Evaluate if $x = 2$: $\dfrac{3x - 5}{x^2 - 4x + 4}$

12. Simplify: $(-2x^2y^3)^5$

13. Simplify: $\dfrac{4x^2y^3z^5}{8x^3yz^3w}$

14. Subtract $-2x^3 + 5x^2 - 3x + 7$ from $5x^3 - 3x^2 - 6x + 2$.

15. Simplify: $-3(x^2 - 2) + (4x - 7) + 2(-3x + 1)$

16. Multiply: $-3x^2y^3(5x^2 - 3y^3 + 2xy)$

17. Multiply: $(2 - x)(x^2 + 2x + 4)$

18. Multiply: $(x + 8)(x - 3)$

19. Divide: $\dfrac{12x^2y^3 - 6x^4y^2 + 3x^3y}{3x^2y}$

20. Which of the following numbers $-2, -1, 0, 1, 2, 3$ are solutions of the equation

$$x^4 - 2x^3 - 5x^2 + 6x = 0$$