

BRONX COMMUNITY COLLEGE  
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

PRACTICE EXAM 1

1. Evaluate each of the following expressions. If an operation is *undefined* state so.

(a)  $-5 - 6(2 - 3)$

(b)  $\frac{7 - 3^2}{-6 + 4}$

(c)  $-\sqrt{81}$

(d)  $(3 - 5)^0$

(e)  $\frac{5 \cdot 6 - (-2)}{8 - 2^3}$

(f)  $\sqrt{1 - 10}$

2. If  $a = -3$ ,  $b = 2$ ,  $x = -1$ ,  $y = 3$  and  $z = -2$  evaluate each of the following expressions:

(a)  $-2a - 3b + 7x$

(b)  $-b^2 + (z)^2$

(c)  $xy - 3(2a + zb)$

(d)  $\sqrt{(z - b)^2 + y^2}$

(e)  $\frac{a}{2a + 3}$

(f)  $A = \frac{2y + b}{2b}$

3. Subtract  $8 - 4x^2y + 2xy^2 - y^2$  from  $5x^2y + 3xy^2 - 4 + y^2$ .

4. Simplify:  $(4x^2 - 2) - 3(2x + 1) + (2x^2 + 5x - 2)$ .

5. Simplify each of the following expressions:

(a)  $x^5x^4$

(b)  $(y^3)^5$

(c)  $\frac{2^8}{2^4}$

(d)  $\frac{-9x^3y^4z^7}{-3x^2y^3z^5}$

6. Multiply  $2xy(-3x^2yz)(-2x^4y^4z^3)$ .

7. Multiply  $-2x^2y^3(-3x + 2y - xy^2)$ .

8. Multiply  $(x - 3)(2x + 5)$ .

9. Multiply  $(2x - 3)(x^2 - 5x + 3)$ .

10. Which of the following numbers  $-1, 1, 2, -2, 3, -3$  are solutions to the equation:

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