

**BRONX COMMUNITY COLLEGE**  
**of The City University of New York**

**DEPARTMENT OF MATHEMATICS and COMPUTER SCIENCE**

**MATH 05**

**Preparation for Test 3 (Chapters 4 and 5)**

**Chapter 4 : Self Test on page 466**

Simplify each expression, using the properties of exponents.

1.  $(3x^2y)(-2xy^3)$       2.  $(\frac{8m^2n^5}{2p^3})^2$       3.  $(x^4y^5)^2$
5.  $(3x^2y)^3(-2xy^2)^2$       7.  $\frac{3x^0}{(2y)^0}$

Classify each of the following polynomials as a monomial, binomial, or trinomial:

8.  $6x^2 + 7x$       9.  $5x^2 + 8x - 8$

Add.

11.  $3x^2 - 7x + 2$  and  $7x^2 - 5x - 9$       12.  $7a^2 - 3a$  and  $7a^3 + 4a^2$

Subtract.

13.  $5x^2 - 2x + 5$  from  $8x^2 + 9x - 7$
14.  $5a^2 + a$  from the sum of  $3a^2 - 5a$  and  $9a^2 - 4a$

Multiply.

17.  $5ab(3a^2b - 2ab + 4ab^2)$       18.  $(x + 3y)(4x - 5y)$       19.  $(3m + 2n)^2$

Divide.

- (\*)  $\frac{24m^4n^2}{6m^2n}$       (\*\*)  $\frac{35x^3y^2 - 21x^2y^3 + 14x^3y}{7x^2y}$

## Chapter 5 : Self Test on page 554

Factor each of the following polynomials.

1.  $7b + 42$       2.  $5x^2 - 10x + 20$

Factor each of the polynomials completely.

3.  $16y^2 - 49x^2$       4.  $32a^2b - 50b^3$       6.  $a^2 - 5a - 14$

8.  $9x^2 - 12xy + 4y^2$       9.  $x^2 + 2x - 5x - 10$       10.  $3w^2 + 10w + 7$

13.  $6x^3 + 3x^2 - 30x$       14.  $x^4 - 81$

Solve each equation for the variable  $x$ .

15.  $x^2 - 2x - 3 = 0$       18.  $2x^2 + 16x + 30 = 0$

### Answers:

**Chapter 4:** 1.  $-6x^3y^4$       2.  $\frac{16m^4n^{10}}{p^6}$       3.  $x^8y^{10}$       5.  $108x^8y^7$

7. 3      8. Binomial      9. Trinomial      11.  $10x^2 - 12x - 7$

12.  $7a^3 + 11a^2 - 3a$       13.  $3x^2 + 11x - 12$       14.  $7a^2 - 10a$

17.  $15a^3b^2 - 10a^2b^2 + 20a^2b^3$       18.  $4x^2 + 7xy - 15y^2$       19.  $9m^2 + 12mn + 4n^2$

(\*)  $4m^2n$       (\*\*)  $5xy - 3y^2 + 2x$

**Chapter 5:** 1.  $7(b + 6)$       2.  $5(x^2 - 2x + 4)$       3.  $(4y + 7x)(4y - 7x)$

4.  $2b(4a + 5b)(4a - 5b)$       6.  $(a - 7)(a + 2)$       8.  $(3x - 2y)(3x - 2y)$

9.  $(x + 2)(x - 5)$       10.  $(3w + 7)(w + 1)$       13.  $3x(2x + 5)(x - 2)$

14.  $(x^2 + 9)(x + 3)(x - 3)$       15.  $x = -1, 3$       18.  $x = -5, -3$