

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

**DEPARTMENT OF MATHEMATICS and COMPUTER SCIENCE**

**MATH 05**

**Preparation for Test 3**

**Chapter 2: Section 2.1**

**Chapter 3: Sections 3.1, 3.3, 3.4**

**Chapter 4: 4.3, 4.4**

**Chapter 5: all sections**

**Chapter 5**

Simplify each expression, using the properties of exponents.

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

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

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

Add polynomials.

8.  $3x^2 - 7x + 2$  and  $7x^2 - 5x - 9$       9.  $7a^2 - 3a$  and  $7a^3 + 4a^2$

Subtract.

10.  $5x^2 - 2x + 5$  from  $8x^2 + 9x - 7$
11.  $5a^2 + a$  from the sum of  $3a^2 - 5a$  and  $9a^2 - 4a$

Multiply polynomials.

12.  $5ab(3a^2b - 2ab + 4ab^2)$       13.  $(x + 3y)(4x - 5y)$       14.  $(3m + 2n)^2$

Divide polynomials.

15.  $\frac{24m^4n^2}{6m^2n}$       16.  $\frac{35x^3y^2 - 21x^2y^3 + 14x^3y}{7x^2y}$

Factor each of the following polynomials.

17  $7b + 42$

18  $5x^2 - 10x + 20$

Factor each of the polynomials completely.

19  $16y^2 - 49x^2$

20.  $32a^2b - 50b^3$

21.  $a^2 - 5a - 14$

22.  $9x^2 - 12xy + 4y^2$

23.  $x^2 + 2x - 5x - 10$

24.  $3w^2 + 10w + 7$

25.  $6x^3 + 3x^2 - 30x$

26.  $x^4 - 81$

Solve each equation for the variable  $x$ .

27.  $x^2 - 2x - 3 = 0$

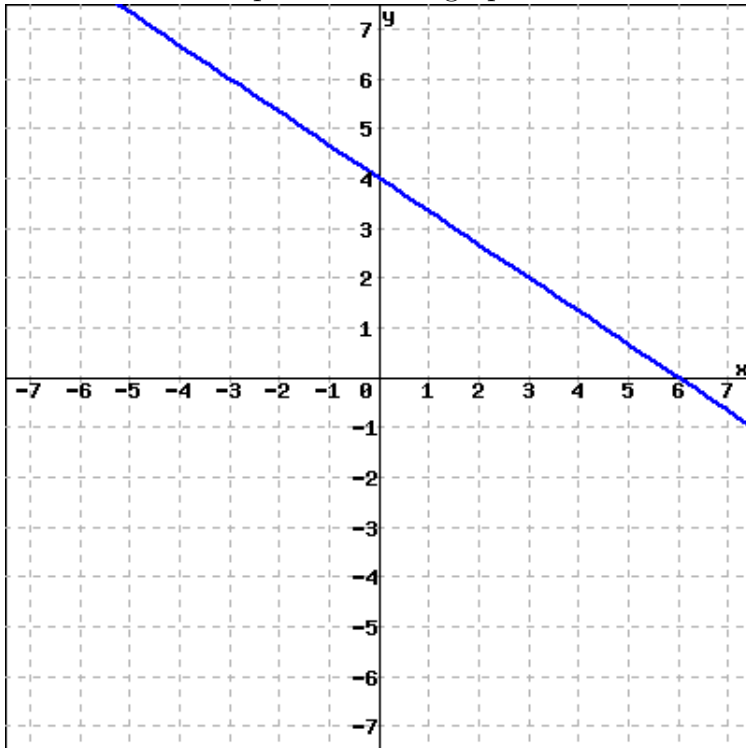
28.  $2x^2 + 16x + 30 = 0$

29.  $6x^2 - 11x - 35 = 0$

### Chapters 4-2

1. Find the slope of the line passing through the points  $(1, -4)$  and  $(3, 5)$ , if possible.

2. What is the slope of the line graphed below?



3. Find the slope and  $y$ -intercept for the graph of the equation  $3x - 8y = -48$

4. Graph the equation  $y = -\frac{1}{2}x + 2$

5. Graph the equation  $y = 2$

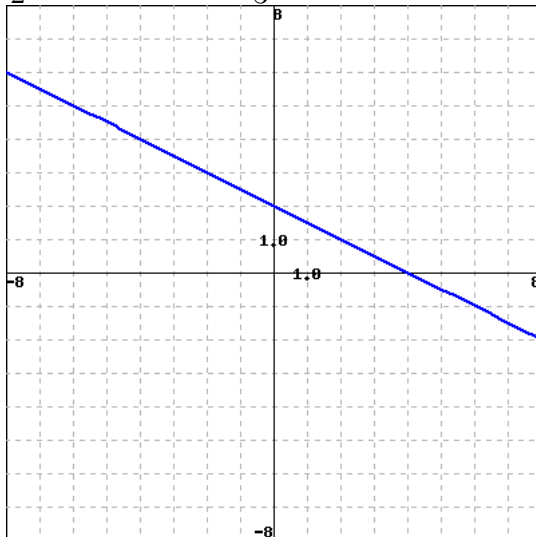
6. Graph the solution to the inequality  $-6x + 130 < 4(4x - 6)$
7. Graph the solution to the inequality  $-7 - 5(-8 + x) \leq -3x + 47$
8. Solve equation  $-3x + 46 = 2(3x + 5)$  for  $x$ .
9. Solve equation  $\frac{x - 30}{15} = \frac{x - 15}{12} + \frac{-2}{3}$  for  $x$ .
10. Given  $a = 4$  and  $b = -2$ , evaluate the expression  $b^2a + ba + a^2$

**Answers:**

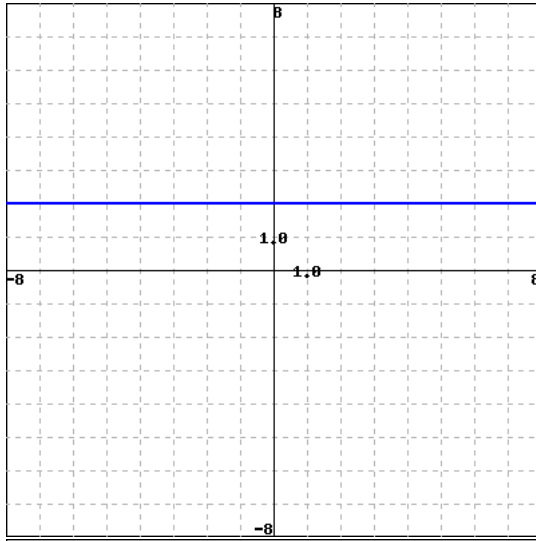
- Chapter 5:** 1.  $-6x^3y^4$     2.  $\frac{16m^4n^{10}}{p^6}$     3.  $x^8y^{10}$     4.  $108x^8y^7$
5. 3    6. Binomial    7. Trinomial    8.  $10x^2 - 12x - 7$
9.  $7a^3 + 11a^2 - 3a$     10.  $3x^2 + 11x - 12$     11.  $7a^2 - 10a$
12.  $15a^3b^2 - 10a^2b^2 + 20a^2b^3$     13.  $4x^2 + 7xy - 15y^2$     14.  $9m^2 + 12mn + 4n^2$
15.  $4m^2n$     16.  $5xy - 3y^2 + 2x$
17.  $7(b + 6)$     18.  $5(x^2 - 2x + 4)$     19.  $(4y + 7x)(4y - 7x)$
20.  $2b(4a + 5b)(4a - 5b)$     21.  $(a - 7)(a + 2)$     22.  $(3x - 2y)(3x - 2y)$
23.  $(x + 2)(x - 5)$     24.  $(3w + 7)(w + 1)$     25.  $3x(2x + 5)(x - 2)$
26.  $(x^2 + 9)(x + 3)(x - 3)$     27.  $x = -1, 3$     28.  $x = -5, -3$
29.  $\{-\frac{5}{3}, \frac{7}{2}\}$

**Chapters 4-2:**

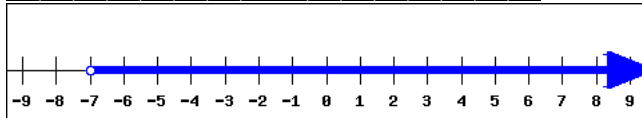
1.  $\frac{9}{2}$     2.  $-\frac{2}{3}$     3. Slope is  $\frac{3}{8}$  and  $y$ -intercept =  $(0, 6)$



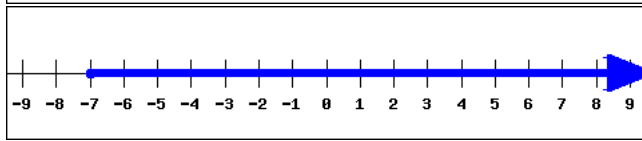
4.



5.



6.



7.

8.  $x = 4$

9.  $x = -5$

10. 24