

DEPARTMENT OF MATHEMATICS and COMPUTER SCIENCE
BCC, CUNY

MATH 05 Test 3 Chapters 6 — 8 Review

1. Solve the following system of equations and choose the appropriate answer from the given four options.

$$\begin{cases} x - y = -2 \\ -2x + 2y = 3 \end{cases}$$

Possible Answers:

- (a) (1, 3) (b) Infinitely many solutions. (c) No Solutions. (d) $\{(-11, -1)\}$
Dependent system. Inconsistent system.

2. Solve the following system of equations and choose the appropriate x -coordinate of the solution.

$$\begin{cases} 3x - 2y = 15 \\ 4x - 3y = 12 \end{cases}$$

Possible Answers:

- (a) $x = 1$ (b) $x = 21$ (c) $x = -3$ (d) $x = \frac{69}{17}$

3. Solve the following system of equations.

$$\begin{cases} x - 3y = -8 \\ 2x + y = 5 \end{cases}$$

4. Simplify each expression, using the properties of exponents.

(a) $(3x^2y)(-2xy^3)$

(b) $\left(\frac{8m^2n^5}{2p^3}\right)^2$

(c) $(x^4y^5)^2$

(d) $(3x^2y)^3(-2xy^2)^2$

$$(e) \frac{3x^0}{(2y)^0}$$

$$(f) (x^{-2}y^3)(xy^{-5})$$

$$(g) \left(\frac{3}{4}x^{-5}y^7\right) \left(\frac{20}{21}x^{12}y^{-15}\right)$$

$$(h) \frac{(-6x^2y^{-3})^2(10x^{-1})^3}{-3x^{-5}y^7}$$

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

$$(a) 6x^2 + 7x$$

$$(b) 5x^2 + 8x - 8$$

6. State the leading term, the leading coefficient, and the degree for each of the polynomials.

$$(a) 19 - 6x^2 + 7x$$

$$(b) 25x^2 + 8x^5 - 8x + 19$$

7. Add or subtract the polynomials.

$$(a) (3x^2 - 7x + 2) + (7x^2 - 5x - 9)$$

$$(b) (15x^3 - 12x + 5x^2 - 1) - (18x^2 + 12x - 6)$$

$$(c) (-x^3 - 5x^2 + 9) - (-8x^2 + 2x)$$

8. Multiply polynomials.

$$(a) 5ab(3a^2b - 2ab + 4ab^2)$$

$$(b) (x + 3y)(4x - 5y)$$

$$(c) (3m + 2n)^2$$

$$(d) (x - 2)(x^2 - 3x + 7)$$

$$(e) (2a - 5b)(2a + 5b)$$

9. Divide polynomials.

(a) $\frac{24m^4n^2}{6m^2n}$

(b) $\frac{35x^3y^2 - 21x^2y^3 + 14x^3y}{7x^2y}$