9 Polynomials

Name : _____ ( )

Class : _____ Date : _____

Worksheet for Classworks — §9.1

Classwork 9.1 *(page 9.4)*

Simplify the following.

(a) $(a^2)(a^3) = a^{(\quad)+(\quad)}$

$= \_\_\_\_\_$

(b) $(5b)(b^4) = (5)(\quad)(\quad)$

(c) $(4c^2)(-3c^5)$

(d) $(-e^2)(-6e^4)$

(e) $(x^2y^4)(x^3y)$

(f) $(3xy^2)(-2xy^3)$

Classwork 9.2 *(page 9.8)*

Simplify the following.

(a) $(b^2)^3 = b^{(\quad)\times(\quad)}$

$= \_\_\_\_\_$

(b) $(2b^4)^4 = (2^4)(\quad)^4$

(c) $(3a^4b)^2$

(d) $(-4a^2b^3)^2$

Classwork 9.3 *(page 9.12)*

Simplify the following.

(a) $m^6 \div m^4 = \dfrac{(\quad)}{(\quad)}$

(b) $6n^5 \div n^2$

(c) $3c^6 \div 6c^{12}$

(d) $\dfrac{25d^3}{-5d^8}$

(e) $x^4y^5 \div x^3y$

(f) $\dfrac{36x^3y^7}{-8x^2y^9}$

9 | **Polynomials**

Name : _____ ( )

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Worksheet for Classworks — §9.3

Classwork 9.4 *(page 9.19)*

Simplify the following.

(a) $2a+7a-4a+3a$

(b) $8c-3d-2d+2c$

(c) $3+5y+y^2-2y-3y^2$

(d) $5x^2+3x+5+6x^2-7-x$

Classwork 9.5 *(page 9.20)*

Simplify the following.

(a) $-2+6hk-7h^2k-5h^2k+4$

(b) $-3b^2c+8cb+7c+6b^2c-4bc-10c$

Classwork 9.6 *(page 9.21)*

Arrange the terms of the following polynomials in ascending powers and descending powers of the variables.

(a) $3a+12-5a^3+9a^2$

Solution:

In ascending powers: _____

In descending powers: _____

(b) $-2b^4+5b^6+2b-7b^3$

Classwork 9.7 *(page 9.21)*

Simplify the following polynomials and arrange the terms in descending powers of the variables.

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

(b) $10b - 9b^2 + 6b - 10 - 4b^3 + 9b + 8$

9 | **Polynomials**

Name : _____ ( )

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Worksheet for Classworks — §9.4

Classwork 9.8 *(page 9.26)*

Simplify the following.

(a) $(x+5y)+(3x-2y)$

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

(c) $(5a+3b-9c)+(-a+6b+c)$

(d) $(-6x+4y-7z)+(-2x-5y-8z)$

Classwork 9.9 *(page 9.26)*

Simplify the following polynomials and arrange the terms in descending powers of the variables.

(a) $(3x^2 + 4x - 5) + (x^2 - 6x + 1)$

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

(c) $(2a^2 - 9) + (-2a^2 - 3a + 8)$

(d) $(9 - 4a^2) + (5a^2 + 7a - 3)$

Classwork 9.10 *(page 9.27)*

Simplify the following.

(a) $(6a-7b)-(a+4b)$

(b) $(-3a-2b)-(5a-7b)$

(c) $(2x-9y+8z)-(3x+y-6z)$

(d) $(4x+5y-6z)-(-x-y+4z)$

Classwork 9.11 *(page 9.27)*

Simplify the following polynomials and arrange the terms in descending powers of the variables.

(a) $(2y^2 - 4y + 7) - (y^2 + 5y - 5)$

(b) $(9 + z^2 - 2z) - (2z^2 + 2z - 2)$

(c) $(5a^2 + 2a - 7) - (3 - 2a^2)$

(d) $(1 + 7b^2) - (9b^2 - 4b + 5)$

Classwork 9.12 *(page 9.28)*

Simplify the following.

(a) $(2xy+5x)+(6x+4xy)$

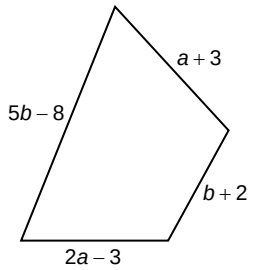
(b) $(7x^3-2x^2y-4y^2)+(-5x^3+3y^2-4yx^2)$

(c) $(3x^2y-5xy^2)-(2x^2-7yx^2)$

(d) $(8x^4-3x^2y-y^3)-(-4x^4-3yx^2+x^2y)$

Classwork 9.13 *(page 9.29)*

(a) Find the perimeter of the polygon as shown in terms of a and b.



(b) If $a = 5$ and $b = 4$, find the perimeter of the polygon.

Solution:

(a) Perimeter = _____

(b)

9 Polynomials

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Worksheet for Classworks — §9.5

Classwork 9.14 *(page 9.33)*

Expand the following.

(a) $2(4x + y)$

$= 2(\quad) + 2(\quad)$

$= $ _____

(b) $4a(2b - 3c)$

(c) $-t(t - 5)$

(d) $-2p(p^2 + 3pq - 4q)$

Classwork 9.15 *(page 9.34)*

Expand the following.

(a) $(3c + 2d)(-2)$

$= (\quad)(-2) + (\quad)(-2)$

$= $ _____

(b) $(-3x + 6y)(-2z)$

(c) $(p-3q)(-5p^2)$

(d) $(2m^2-4mn+3n^2)(5mn)$

Classwork 9.16 *(page 9.35)*

Expand and simplify the following.

(a) $a(2a-3)-4a^2$

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

(c) $[-a^2+5(a-3)](-2)$

(d) $(3b-1)(2b)+(2-b)(-3b)$

Classwork 9.17 *(page 9.37)*

Expand the following.

(a) $(2x-3)(x-4)$

$= 2x(\quad\quad) + (-3)(\quad\quad)$

(b) $(3y+2)(-4y-3)$

(c) $(x+4y)(2x-y)$

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

Classwork 9.18 *(page 9.37)*

Expand the following.

(a) $(2x^2 + 2x - 1)(x + 1)$

(b) $(5x^2 - 2)(3x^2 - x + 7)$