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OPERATIONS ON SINGULAR AND MULTIPLE

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Abstract: This article discusses various operations on polynomials, focusing on multiplication, division, simplification, and coefficient summation. The author explains the methods for multiplying a polynomial by a unit, another polynomial, or a monomial. Division of polynomials by units and by other polynomials is also covered, emphasizing the necessity to divide each term individually and simplify the result. The article provides examples and guidelines for performing these operations without writing intermediate steps. Additionally, it includes test questions and exercises to reinforce understanding of the topic. The references section lists academic works by the author and others, which serve as sources for the information presented in the article.

Key words: set, finite set, partial set, proper partial set, empty set, intersection, union, complementary set, universal set, Euler-Venn diagram , an ordered pair.

INTRODUCTION

Multiplying a polynomial by a unit

To multiply a polynomial by a unit, it is necessary to multiply each term of the polynomial by this unit and add the resulting products.

As a result of multiplying a polynomial by a unit, another polynomial is formed. The resulting polynomial should be simplified by writing all its terms in standard form. Without writing the intermediate results, it is possible to multiply the sums orally and write the answer at once, for example

$$\left(-3ab+2a^2-4b^2\right)\left(-\frac{1}{2}ab\right)=\frac{3}{2}a^2b^2-a^3b+2ab^3.$$

Multiplying a monomial by a polynomial is done in a similar way, because changing the places of the multipliers does not change the product, for example, $4pq\left(3p^2-q+2\right)=12p^3q-4pq^2+8pq.$

Multiplying a polynomial by a polynomial

Example 1:

Find the face of the wall surface occupied by the cabinets with dimensions shown in Figure 10. Surface sides of the wall occupied by cabinets

$$2a+c+2a=4a+c \ va \ a+b+a=2a+b$$

consists of a rectangle. This is the face of a rectangle

$S=(4a+c)(2a+b)$ is equal to

To multiply a polynomial by a polynomial, you need to multiply each term of the first polynomial by each term of the second polynomial and add the resulting products [1-11].

Dividing a polynomial into a unit2-misol:

$2a^2b+4ab^2+8abc$ a lot $2ab$ be united.

We use this rule: when dividing the sum by a number, each addend must be divided by this number, i.e.

$$(2a^2b+4ab^2+8abc):(2ab)=(2a^2b):(2ab)+$$

$$+(4ab^2):(2ab)+(8abc):(2ab)=a:2b+4c$$

A polynomial is divided into a singular in the same way in other cases, e.g.

$$(9a^3b^2-3a^2b^3+a^2b^2):(3a^2b^2)=$$

$$=(9a^3b^2):(3a^2b^2)+(-3a^2b^3):(3a^2b^2)+(a^2b^2):(3a^2b^2)=3a-b+\frac{1}{3}.$$

To divide a polynomial by a unit, you need to divide each term of the polynomial by this unit and add the results. To strengthen the knowledge of the topic, we will perform the following tests and written work questions.

1. Divide into multipliers. $4x-6y$

A) $2\cdot(2x-3y)$

$B)\ 2\cdot(2x+3y)$

C) $2\cdot(-2x+3y)$

$D)\ 2\cdot(-2x-3y)$

2. Divide into multipliers. $16x^2-8x$

A) $8x\cdot(2x+1)$

$B)\ 8x\cdot(-2x-1)$

C) $8x\cdot(-2x+1)$

$D)\ 8x\cdot(2x-1)$

3. Divide into multipliers. $9x^3-12x^2+15x$

A) $3x\cdot(3x^2+4x+5)$

$B)\ 3x\cdot(3x^2-4x-5)$

C) $3x\cdot(3x^2-4x+5)$

$D)\ 3x\cdot(-3x^2-4x+5)$

4. Divide into multipliers.

$4x\cdot(a-2b)-6y\cdot(a-2b)$

A) $2\cdot(2x+3y)\cdot(a+2b)$

$B)\ 2\cdot(2x-3y)\cdot(a+2b)$

C) $2\cdot(2x+3y)\cdot(a-2b)$

D) $2\cdot(2x-3y)\cdot(a-2b)$

5. Divide into multipliers.

$15x\cdot(3x-5y)-35y\cdot(3x-5y)$

A) $5\cdot(3x+5y)\cdot(3x+7y)$

B) $5\cdot(3x-5y)\cdot(3x+7y)$

C) $5\cdot(3x-5y)\cdot(3x-7y)$

D) $5\cdot(3x+5y)\cdot(3x-7y)$

6. Simplify.

$2 \cdot (2x - 3y) \cdot (a - 2b)$

7. Find the sum of the coefficients.

$9x^3 - 12x^2 + 15x$

8. Find the degree of the polynomial [12-23].

$10mx - 6nx - 15my + 9ny$

9. Solve the equation. $10x \cdot (4x + 12) = 0$

10. Many words ……

Summary: This article discusses various operations on polynomials, including addition, subtraction, multiplication, and others. The author explains how to perform multiplication, division, or raising to a power with a polynomial by another polynomial or a monomial. Division of polynomials by units or by other polynomials is also covered, emphasizing the necessity to divide each term individually and express the result in its simplest form. The article provides methods for performing these operations without writing excessive steps. Additionally, it includes test questions and exercises aimed at reinforcing understanding of the topic. The article refers to academic works authored by the writer and others as sources for the presented information.

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