MATHEMATICS · GRADES 7-9

Polynomial terminology

Difficulty level: Intermediate

Mathematics: Grades 7-9

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Overview of the concept

This is how you name the parts of an expression so you can talk about it clearly, like a mechanic naming the parts of an engine before fixing it. A mechanic who says the spark plug is worn can be understood right away, while one who just points and says that thing there cannot. Maths works the same way, so a term, a coefficient, and a degree each have a name you can use. Once you can name the parts, you can explain a problem to someone else and follow their explanation back.



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Worked examples

EXAMPLE 1

Q For $3x^2 + 2x - 5$, give the number of terms, the degree, the leading coefficient, and the constant term.

SOLUTION

Count the terms first: $3x^2$, $2x$, and -5, so three terms. The degree is the highest power of x, which is 2.

The leading term is $3x^2$, so the leading coefficient is 3. The constant term is -5.

EXAMPLE 2

Q Classify $4x^3 - x + 7$ by its number of terms and by its degree.

SOLUTION

It has three terms, $4x^3$, $-x$, and 7, so it is a trinomial. The highest power of x is 3, so it is a cubic.

Trinomial, degree 3, cubic

Practice questions

1 How many terms does $2x^3 + x - 4$ have?

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2 **What is the degree of $5x^4$?**

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3 **What is the coefficient of x in $7x + 2$?**

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4 **What is the constant term of $3x^2 - x + 9$?**

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5 What is the leading coefficient of $-2x^3 + 4x - 1$?

A -2

B 2

C 4

D -1

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6 What is the degree of the term $3x^2y$?

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7 Which is a monomial: $5x$ or $5x + 2$?

- **A** $5x$
- **B** $5x + 2$

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8 Which is $4x + 2x^3 - 1$ written with the terms in order from the highest power to the lowest?

- **A** $2x^3 + 4x - 1$
- **B** $4x + 2x^3 - 1$
- **C** $2x^3 + 4x + 1$
- **D** $2x^3 - 4x - 1$

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9 Is $x^2 + \frac{1}{x}$ a polynomial?

- **A** Yes
- **B** No

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10 Classify $6x^2 - 3$ by its number of terms and by its degree.

- **A** Binomial, quadratic
- **B** Monomial, quadratic
- **C** Binomial, cubic
- **D** Trinomial, quadratic

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ANSWER KEY

1. 3

2. 4

3. 7

4. 9

5. –2

6. 3

7. 5x

8. $2x^3 + 4x - 1$

9. No

10. Binomial, quadratic

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