

The Degree of a Polynomial



Preliminaries

- Exponents
- Variables

Objectives

- Polynomials
- Degree of a polynomial

Materials

- Real Numbers
- A variable “x”

Operations

- Addition
- Subtraction
- Multiplication

What We Get

4	x^2
x	$\frac{1}{2}x^2$
4x	$\frac{1}{2}x^2 + 4x - 3$
4x - 3	$(x - 3)(x - 4) = x^2 - 7x + 12$

Terms

Term

- 1 The product of a real number and x raised to a positive integer power, OR
- 2 a lone real number (called the **constant**)

Polynomial

A polynomial is the sum of terms

Leading Term

The term of a polynomial with the largest power of x

Degree of a Polynomial

Degree of a Polynomial

The exponent of the leading term

Examples

$6x^5 - 12x^4 + x^2 - 7$ has degree 5

$(x + 3)(x - 4)$ has degree 2 since $(x + 3)(x - 4) = x^2 - 2x - 12$

Further Examples

Determine whether or not the given expression is a polynomial.
If it is, find the degree.

$(3x^2 - 2)(4 - x)$ $\frac{4}{3}$

$\frac{x^2 - x - 1}{x + 3}$ $x + 3$

$x^2 + x^{-2}$ $x^2 + x^4 - 3$