SIMONE

# POLYNOMIALS

## POLYNOMIAL

Polynomials are named based on two basic.
1. The highest exponent
2. The number of terms

## How to name the polynomial

For example :
x3-4x2+3x-1
→ The highest exponent is three
→ The number of terms is four
So, the name of this polynomial is cubic four term of polynomial.

For example :
x3-5x+1
→ The highest exponent is three
→ The number of terms is three
So, the name of this polynomial is Cubic Trinomial

| Exponent | Terms |
|---|---|
| 0 constant | 0 constant |
| 1 linear | 1 monomial |
| 2 quadratic | 2 binomial |
| 3 cubic | 3 trinomial |
| 4th Degree | 4th Term Polynomia |
| 5th Degree | 5th Term Polynomia |
| 6th Degree | 6th Term Polynomia |
| 7th Degree | 7th Term Polynomia |
| 8th Degree | 8th Term Polynomia |

| Polynomial | Degree | Number of Terms | Name |
|---|---|---|---|
| $10x^3+4x^2+x-4$ | 3 (from the $x^3$) | 4 | **Cubic Polynomial** |
| $t(t^3+t)=t^4+t^2$ | 4 (from the $t^4$) | 2 | **Quartic Binomial** |
| 8 | 0 (no variables) | 1 | **Constant Monomial** |
| $\frac{(x+4)}{2}+\frac{xy}{\sqrt{3}}+3$ | 2 (from the $xy$) | 3 | **Quadratic Trinomial** |
| $4x^3y^4+2x^2y+xy+x+y-4$ | 7 (from the $x^3y^4$) | 6 | **Polynomial of Degree 7** |
| $x(x+4)^2(x-3)^5$ | 8 (add up the exponents: 1 + 2 + 5 = 8). | (Difficult to say unless multiply out) | **(Difficult to say unless multiply out)** |

## ADD THE POLYNOMIALS.

(2x^2 + 6x + 5)+ (3x^2 - 2x - 1)

## HOW TO DO IT!

Combine like terms add 2x^2

STEP1

with 3x^2 to get 5x^2

2x^2 +3x^2 = 5x^2

STEP 2

Add 6x with with minus 2x to get 4x

(6x - 2x) = 4x

Add 5 with minus 1

5-1 = 4

STEP 3

Answer

5x^2 + 4x + 4

## SUBTRACT THE POLYNOMIALS.

(-r^2+8pr-p)-(-12r^2-2pr-8p)

How to do it !

### STEP 1

Combine like terms

(-r^2+12r^2)
+
(8pr+2pr)
+
(-p+8p)

### STEP 2

Add like terms to get answer

11r^2+10pr+7p

### STEP 3

Answer

11r2+10pr+7p

+/+=+
-/-=+
-/+=-
+/-=-

### ADD

Don't forget to change the sing

## MULTIPLY POLYNOMIALS

(10s^5t)(7st^4)

### STEP 1

Use distribute property and then combine like

### STEP 2

Plus the variable and

terms. Time the numbers and plus the power of exponent each variable

(10s^5*7s)

Answer= 70s^6

Add : s is the power of 1 (usually we don't write it down)

exponent together

t+t^4 = t^5

## STEP 3

Add them together

**The answer is 70s^6t^5**

# SPECIAL PRODUCTS OF BINOMIALS

## STEP 1

(x-6)^2

Make it to two set

(x-6)(x-6)

## STEP 2

Time x and x together and time x with -6

x^2-6x

Time -6 and x together then time -6 and -6 together

-6x+(-6*-6)

## STEP 3

Don't forget to time in the middle

-6x-6x= -12x

Then Plus -6 time -6 together

(-6*-6) =+36

## STEP 4

Combine the answer

Answer : x^2-12x+36

## DIVISION OF EXPONENTS

20m^5/4m^2

### STEP 1

Divide numerator of 20 by denominator of 4

Answer is 5

### STEP 2

minus m to the power of 5 with m to the power of 2

m^3

### STEP 3

Combine like terms

**The answer is 5m^3**