



Polynomial

In this question, the goal is to implement a class for managing polynomials.

This class stores the coefficients of a polynomial as an array. It is guaranteed that:

1. The coefficients are all integers.
2. The degree of all polynomials is at most 20.

Implement the following methods for the class:

- A default constructor that initializes all coefficients to zero.
- A copy constructor that copies another polynomial into this polynomial.
- The single operand operator "-" which calculates the polynomial relation.
- The "=" operator assigns the right-hand polynomial to the left-hand side.
- Addition, division and multiplication operators between two polynomials
- Operator "/" and "%" between two polynomials that should calculate the outer part and the remainder of the division of two polynomials, respectively. The implementation of these two operators has an additional score. For a reminder about dividing two polynomials, refer to the high school math book!
- Addition, subtraction and multiplication operators between a polynomial and an integer (the



▼ Questions

40

Timestamp

60

Polynomial

50

Challenge: Different
Initialization

All submissions

Final submissions

Scoreboard

integer can be the first operand or the second operand)

- `>>` operator for ostream that prints a polynomial in standard form.
- `<<` operator for istream that takes a polynomial in standard form from the input and assigns it to the object.

What is the standard form of polynomials?

```
+3x^2-10x+1
-5x^3+2
+10-50x^10+x
+x-x^2+1
```

Consider the following points when working with the standard form:

- When printing multiple sentences, the sentences should be printed from uppercase to lowercase. But the user does not necessarily comply with this standard when logging in.
- Sentences with zero coefficient are not displayed.
- A positive sign is always written after the number.
- The coefficient of x^0 is displayed as a fixed number and x^0 is not displayed.
- If the sentence coefficient is +1 or -1, that coefficient is not displayed; Except for the case where the coefficients of the sentence are x^0 .
- Power of one is not displayed in x^1 .

sample main

```
int main(){
    Polynomial p1,p2;
    cin>>p1>>p2;
    Polynomial p3=p1*p2,p4;

    p4=2-p1;
    cout<<p1+p2<<endl;
    cout<<p4<<endl;
    cout<<p3<<endl;
    cout<<p2*3<<endl;
    return 0;
}
```

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