Polynomial Addition & Multiplication

From Wikipedia (https://en.wikipedia.org/wiki/Polynomial)

Polynomial

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In mathematics, a **polynomial** is an expression consisting of variables (also called indeterminates) and coefficients, that involves only the operations of addition, subtraction, multiplication, and non-negative integer exponents of variables. An example of a polynomial of a single indeterminate, x, is $x^2 - 4x + 7$. An example in three variables is $x^3 + 2xyz^2 - yz + 1$.

This question is about finding a sum of 2 polynomial equation with single variable. We can represent polynomial with list of tuple, each tuple has 2 values. The first is coefficient, the second is number of exponent such as $4x^2 + 3x - 1$ becomes [(4, 2), (3, 1), (-1, 0)]. With tuples arrange from exponent number from large to small. Write function **add_poly(p1, p2)** and **mult_poly(p1, p2)** that returns the sum and the multiplication results of p1 and p2. Use the program structure below:

```
def add_poly(p1, p2):


def mult_poly(p1, p2):


# You must have 2 lines below to submit to grader
for i in range(3):
        exec(input().strip())
```

Input

Command in Python language to test a function

Output

Return output from a function call in input

Example

Input (from keyboard)		Output (on screen)	

`p1 = [(3,6),(2,4),(1,1),(-1,0)]`
`p2 = [(3,4),(-1,1)]`
`print(add_poly(p1, p2))`
	$3x^6 + 2x^4 + x - 1$
	$3x^4 - x$
		`[(3,6),(5,4),(-1,0)]`	$3x^6 + 5x^4 - 1$

`p1 = [(3,6),(2,4)]`
`p2 = [(1,4),(-1,2)]`
`print(mult_poly(p1, p2))`
	$3x^6 + 2x^4$
	$x^4 - x^2$
		`[(3,10),(-1,8),(-2,6)]`	$3x^{10} + x^8 - 2x^6$