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)]	$3x^{10}+x^8-2x^6$