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# Email : anis_saied@hotmail.com
# Série révision 1 :
# Exercice 2

# Question 1
def saisie_deg():
    while 1:
        try:
            n=int(input("deg="))
            if n > 0:
                break #arrêter la boucle while
        except ValueError:
            print("Erreur")

    # arrêter l'exécution de la fonction et retourner n
    return n

# Question 2
def saisie_poly(n):
    p = []
    for i in range(n+1):
        while 1:
            try:
                coef = float(input("coef[{}] = ".format(i)))
                if (i<n) or (i == n and coef != 0):
                    p.append(coef)
                    #arrêt de while et passer à i suivant
                    break
            except:
                continue
    return p

# Question 3
def derive(p):
    return [p[i] * i for i in range(1,len(p))]

# Question 4
def opp_poly(p):
    return [-coef for coef in p]

# Question 5
def add_poly(p1,p2):
    n1, n2 = len(p1),len(p2)
    p3= [p1[i] + p2[i] for i in range(min(n1,n2))]
    if n1 > n2 :
        p3 += p1[n2+1:n1]
    elif n2 > n1:
        p3 += p2[n1+1:n2]

    while len(p3)>1 and p3[-1]==0:
        p3.pop()

    return p3

```

Question 6

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def mul_poly(p1,p2):  
    deg1 = len(p1)-1  
    deg2 = len(p2)-1  
    p3 = [0] * (deg1+deg2+1)  
  
    for i in range (len(p1)):  
        for j in range(len(p2)):  
            p3[i+j] += p1[i]*p2[j]  
  
    return p3
```

#programme principal

```
if __name__ == '__main__':  
    n = saisie_deg()  
    p = saisie_poly(n);  
    d = derive(p); print(d)  
    a = add_poly(p,d); print(a)  
    m = mul_poly(p,d); print(m)
```