

Example 4 Python functions

```
1 {a,b,c,d,e,f,h,i,j,k,l,m,n,o,p,q,r,s,t,u#}::Indices.
2
3 def truncate (poly,n):
4
5     # define the weight and give it a label
6     x^{a}::Weight(label=\epsilon).
7
8     # start with an empty expression
9     ans = Ex("0")
10
11    # loop over selected terms in the source
12    for i in range (0,n+1):
13
14        foo := @ (poly).
15        bah = Ex("\epsilon = " + str(i))
16
17        # extract a single term
18        keep_weight (foo, bah)
19
20        # update the running sum
21        ans = ans + foo
22
23    # all done, return final answer
24    return ans
25
26    Quartic := c^{a}
27              + c^{a}_{b} x^b
28              + c^{a}_{b c} x^b x^c
29              + c^{a}_{b c d} x^b x^c x^d
30              + c^{a}_{b c d e} x^b x^c x^d x^e.    # cdb (ex-04.100,Quartic)
31
32    Cubic = truncate (Quartic,3)                    # cdb (ex-04.101,Cubic)
33
34    checkpoint.append (Cubic)
```

$$p(x) = c^a + c^a_b x^b + c^a_{bc} x^b x^c + c^a_{bcd} x^b x^c x^d + c^a_{bcde} x^b x^c x^d x^e \quad (\text{ex-04.100})$$

$$q(x) = c^a + c^a_b x^b + c^a_{bc} x^b x^c + c^a_{bcd} x^b x^c x^d \quad (\text{ex-04.101})$$