Exercise 4.7 Return in functions

```
{a,b,c,d,e,f,g,h,i,j,k,l#}::Indices(position=independent).
    # -----
    # this function uses in-place changes for obj
    def tidy (obj):
       sort_product (obj)
      rename_dummies (obj)
       canonicalise (obj)
10
11
                                    # cdb (ex-0407.101,foo)
    foo := C^{f} B^{a} A_{f}.
12
    tidy (foo)
                                       # cdb (ex-0407.102,foo)
13
    # -----
15
    # this function creates new objects,
16
    # it will not give the correct result
17
18
    def tidy (obj):
19
20
       bah := @(obj).
21
22
       sort_product (bah)
23
       rename_dummies (bah)
       canonicalise (bah)
       obj := @(bah).
27
28
    foo := C^{f} B^{a} A_{f}.
                                      # cdb (ex-0407.201,foo)
29
    tidy (foo)
                                        # cdb (ex-0407.202,foo)
31
    # -----
32
    # this function uses a return statement
33
    # it will give the correct result
34
35
    def tidy (obj):
```

```
37
         bah := @(obj).
38
39
         sort_product
                         (bah)
40
         rename_dummies (bah)
41
         canonicalise
                         (bah)
42
43
         obj := @(bah).
44
45
         return obj
46
47
     foo := C^{f} B^{a} A_{f} a}.
                                                     # cdb (ex-0407.301,foo)
48
     foo = tidy (foo)
                                                     # cdb (ex-0407.302,foo)
```

$$C^f B^a A_{fa} = A_{ab} B^b C^a$$
 (ex-0407.102)
 $C^f B^a A_{fa} = C^f B^a A_{fa}$ (ex-0407.202)
 $C^f B^a A_{fa} = A_{ab} B^b C^a$ (ex-0407.302)