Exercise 1.11 Cycling free indices – preferred solution

```
{a,b,c,d,e,f,u,v,w}::Indices.

expr := A_{a b c}.  # cdb (ex-0111.101,expr)

rule := T_{a b c} -> @(expr).
expr := T_{b c a}.  # cdb (ex-0111.102,expr)

substitute (expr, rule)  # cdb (ex-0111.103,expr)
```

```
A_{abc} (ex-0111.101)

T_{bca} (ex-0111.102)

A_{bca} (ex-0111.103)
```

Exercise 1.11 Cycling free indices – alternative solution

This alternative solution uses two rounds of Kroncker deltas. It does the job but is not as simple as the previous solution.

$$A_{abc}$$
 (ex-0111.201)
 $\delta^{a}{}_{u}\delta^{b}{}_{v}\delta^{c}{}_{w}A_{abc}$ (ex-0111.202)
 A_{uvw} (ex-0111.203)
 $\delta^{u}{}_{b}\delta^{v}{}_{c}\delta^{w}{}_{a}A_{uvw}$ (ex-0111.204)
 A_{bca} (ex-0111.205)