In [ ]:
```
#Problem 4-1

Decision Varaiables
x1>=0 #each x is a rotation type
x2>=0
x3>=0
x4>=0


Objective
Minimize cost
250x1+200x3+300(x2+x4)


Constraints
x1+x2+x4 >=30
x2 >= 8
x2+x3>=12
x2+x3>=20
x2+x3+x4>=25
x1+x3+x4>=30
x1+x4>=35
```

In [4]:
```
using JuMP, Cbc, NamedArrays

m=Model()

@variable(m,x1>=0)
@variable(m,x2>=0)
@variable(m,x3>=0)
@variable(m,x4>=0)

@objective(m, Min,250x1+200x3+300(x2+x4))

@constraint(m,x1+x2+x4 >=30)
@constraint(m, x2 >= 8)
@constraint(m, x2+x3>=15)
@constraint(m,x2+x3>=20)
@constraint(m, x2+x3+x4>=25)
@constraint(m, x1+x3+x4>=30)
@constraint(m,x1+x4>=50)

set_optimizer(m, Cbc.Optimizer)
optimize!(m)
```

```
Presolve 5 (-2) rows, 4 (0) columns and 13 (-3) elements
0  Obj 2400 Primal inf 131 (5)
3  Obj 17550
Optimal - objective value 17550
After Postsolve, objective 17550, infeasibilities - dual 0 (0), primal 0 (0)
Optimal objective 17550 - 3 iterations time 0.012, Presolve 0.00
```

In [ ]: