In [ ]:
```
#Problem 2-1
Decision Variables
x1 #block of cheese
x2 #wheel of cheese
x3 #waste
x4 #Special Spread
y1 #Method 1
y2 #Method 2
y3 #Raw Materials and Pasturing


Objective
Max 3x1+x2+x3+10x4 - (3y1+4y2+25y3)


Constraints
x1 <= 500
x2 <= 250
x3 <= 3000
x4 <= 400

x1 >= 0
x2 >= 0
x3 >= 0
x4 >= 0
y1 >= 0
y2 >= 0
y3 >= 0
y4 >= 0
```

In [2]:
```
#Problem 2-2
using JuMP, Cbc, NamedArrays

m=Model()

@variable(m, x1 >=0) #block of cheese
@variable(m, x2 >=0) #wheel of cheese
@variable(m, x3 >=0) #waste
@variable(m, x4 >=0) #Special Spread
@variable(m, y1 >=0) #Method 1
@variable(m, y2 >=0) #Method 2
@variable(m, y3 >=0) #Raw Materials and Pasturing

@objective(m, Max, 3x1+10x2+x3+20x4 - (3y1+4y2+25y3))

@constraint(m, x1 <= 500)
@constraint(m, x2 <= 250)
@constraint(m, x3 <= 3000)
@constraint(m, x4 <= 400)

@constraint(m, 0.5x4 + 1.2y1 + 2y2 + 0.5y3 <= 300)
@constraint(m, y3 >= y1+y2)

@constraint(m, x1 >= 0)
```

```
@constraint(m, x2 >= 0)
@constraint(m, x3 >= 0)
@constraint(m, x4 >= 0)
@constraint(m, y1 >= 0)
@constraint(m, y2 >= 0)
@constraint(m, y3 >= 0)

@constraint(m,x1 <= 9y1 + 4y2)
@constraint(m,x2 <= 2y1 + 3y2)
@constraint(m,x3 + x4 <= 30y1+40y2)


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

```
Presolve 5 (-11) rows, 7 (0) columns and 17 (-11) elements
0  Obj -0 Dual inf 67.417891 (4)
5  Obj 10421.656
Optimal - objective value 10421.656
After Postsolve, objective 10421.656, infeasibilities - dual 0 (0), primal 0 (0)
Optimal objective 10421.65605 - 5 iterations time 0.022, Presolve 0.01
```

In [ ]: