Assignment9

```
library(lpSolveAPI)
```

The objective function would be: Maximize Z = P + -6y2p + -6y2m + -3y3p + -3y3m

Where P = x1 + x2 + x3

y2p - y2m = 6x1 + 4x2 + 5x3 - 50 y3p - y3m = 8x1 + 7x2 + 5x3 - 75

Thus: Maximize Z = x1 + x2 + x3 + -6y2p + -6y2m + -3y3p + -3y3m

// Objective function min: y1p + y1m + 6 y2p + 6 y2m + 3 y3p + 3 y3m;

// Constraints 20 x1 + 15x2 + 25x3 + y1m - y1p >= 125; 6x1 + 4x2 + 5x3 + y2m - y2p = 50; 8x1 + 7x2 + 5x3 + y3m - y3p >= 75;

```
gp_sl <- read.lp("assignment9.lp")
gp_sl
```

```
## Model name:
##   a linear program with 9 decision variables and 3 constraints
```

```
solve(gp_sl)
```

```
## [1] 0
```

```
get.objective(gp_sl)
```

```
## [1] 0
```

```
get.variables(gp_sl)
```

```
## [1] 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 8.333333
## [9] 3.333333
```

The results of this model show that y1p, y1m, y2p, y2m , y3p, y3m, and x1 are all 0. x2 and x3 are 8.333 and 3.333 respectfully. Thus the secondary goals of employee retention and next year's earnings will not be met entirely.