

```
$Title GeneralMILP
```

Sets

```
i          /i1*i20/  
l(i)  
j          /j1*j30/  
k          /k1*k50/  
;  
l(i)=NO;
```

```
*alias(ip,i);  
*cons(i).. b(i)= sum(ip,a(ip));
```

Parameter

```
c(j)  
f(k)  
a(i,j)  
d(i,k)  
b(i)  
h(i,k)  
e(i)  
;  
  
*execseed = 1+gmillisec(jnow);  
  
c(j) = uniform(10,20);  
f(k) = uniform(20,30);  
a(i,j) = uniform(5,10);  
d(i,k) = uniform(100,200);  
b(i)   = uniform(2000,5000);  
h(i,k) = uniformint(3,7);  
e(i)   = round(uniform(2,8));  
  
l(i)$(b(i)>=150)=YES;
```

Free Variable

```
z  
;
```

Positive Variable

```
x(j)  
;  
x.up(j)=5;
```

Binary Variables

```
y(k)  
;
```

Equations

```
obj  
cons1  
cons2  
;  
  
obj.. z =e= sum(j,c(j)*x(j)) + sum(k,f(k)*y(k));  
cons1(i)$(L(i)).. sum(j,a(i,j)*x(j)) + sum(k,d(i,k)*y(k)) =g= b(i);  
cons2(i).. sum(k,h(i,k)*y(k)) =g= e(i);  
;
```

```
Model GeneralMILP
```

The logo for OptimYar features a large, stylized gear on the left and a jagged, mountain-like shape on the right, both rendered in a light blue color. Below these elements, the word "OptimYar" is written in a large, bold, light blue font. The entire logo is semi-transparent and overlaid on the GAMS code.

OptimYar

```

/
obj
cons1
*cons2
/
;

Options
mip = CPLEX
reslim =100
optcr = 0.01
;

scalar o /0/;
z.l=10000;

while ((z.l-658.501)/z.l >0.50 ,
y.fx(k)=round(uniform(o,1));
o=o+.1;

Solve GeneralMILP us mip min z;
);

Scalar Counter1 /0/;
loop(k,
if(y.l(k) = 1,
Counter1 = Counter1+1;
);
)
;

parameters
VC(i);
VC(i) = sum(j,a(i,j)*x.l(j)) + sum(k,d(i,k)*y.l(k))

Display
z.l
x.l
y.l
cons1.m
c
h
e
VC
Counter1
L
;

```



OptimYar