```
$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
```

```
/
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
;
```