

## Current Directory

/Users/mitchj/Documents/courses/mat

- k20a.dat
- knapsack.dat
- knapsack.mod
- knapsack.txt
- knapsack0.dat
- knapsack20.dat
- knapsack20o.dat
- knapsack3.mod
- knapsack32.mod

## Console

```
AMPL
ampl: option solver cplex;
ampl: model knapsack.mod;
ampl: data knapsack20.dat;
ampl: solve;
CPLEX 12.8.0.0: optimal solution; objective 42.76923077
2 dual simplex iterations (1 in phase I)
ampl: display x;
x [*] :=
1 1
2 0
3 0
4 0
5 0
6 0
7 0
8 0
9 0
10 0
11 0
12 0
13 0.692308
14 0
15 0
16 0
17 0
18 0
19 0
20 1
;
ampl:
```

welcome.txt

knapsack.mod

knapsack20.dat

```
#####
### model file for knapsack problem
#####

param n > 0;

param c{1..n} >=0 ;

param a{1..n} >=0 ;

param b >=0 ;

param ncuts ;

set Cover{j in 1..ncuts} within {1..n} ;

var x{1..n} >=0, <= 1;

maximize objective: sum{i in 1..n} c[i]*x[i];

subject to capacity: sum{i in 1..n} a[i] * x[i] <= b;

subject to covercon{j in 1..ncuts}: sum{i in Cover[j]} x[i] <= card(Cover[j])-1
```