Úloha C

Načítali sme dáta a uložili do premenných y - (závislá premenná price), x - (všetky premenné od ktorých cena závisí)

```
data = pd.read_csv('data\A04wine.csv')
y = data['Price']
x = data[['WinterRain','AGST', 'HarvestRain', 'Age', 'FrancePop']]
numberOfVariablesBeta = x.shape[1]+1
```

```
#l1 norm
c = np.array([0]*numberOfVariablesBeta + [1] * len(x.values))
ALeft = np.matrix([ [1] * len(x.values)]).transpose()
ARigth = np.matrix(x.values)
A = np.block([ALeft, ARigth])
I = np.identity(len(x.values))
```

```
A_ub = np.block([[-A, -I], [A, -I]])
b_ub = np.concatenate([-y, y])
solve = linprog(c, A_ub, b_ub)
```

Vypočítali sme β koeficienty

```
bethas = solve.x[:numberOfVariablesBeta]
print(bethas)
```

A to isté pre L^{∞}.

```
#l inf norm
c_inf = np.array([0]*numberOfVariablesBeta + [1])
A_inf = np.block([ALeft, ARigth])
i_inf = np.array([ [1] * len(x.values)]).transpose()

A_ub_inf = np.block([[-A_inf,-i_inf],[A_inf,-i_inf]])
b_ub_inf = np.concatenate([-y, y])
solve_inf = linprog(c_inf, A_ub_inf, b_ub_inf)

bethas_inf = solve_inf.x[:numberOfVariablesBeta]
print(bethas_inf)
```