Zadanie2Lab4

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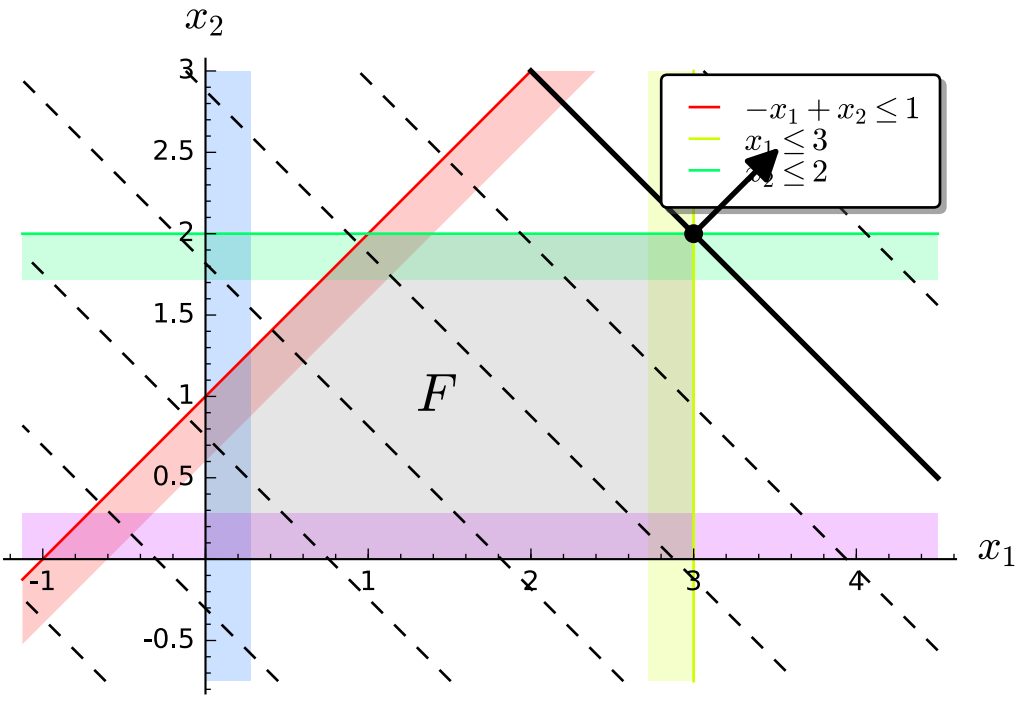
22.03.2017

```
%typeset_mode True
A = ([-1, 1], [1, 0], [0,1])
b = (1,3,2)
c = (1,1)
P = InteractiveLPProblemStandardForm(A, b, c, ["x1", "x2"])
P.plot()
view(P)
D = P.initial_dictionary()
view(D)
```



$$\begin{aligned} \max \quad & x_1 + x_2 \\ & -x_1 + x_2 \leq 1 \\ & x_1 \leq 3 \\ & x_2 \leq 2 \\ & x_1, x_2 \geq 0 \end{aligned}$$

$$\begin{aligned} x_3 &= 1 + x_1 - x_2 \\ x_4 &= 3 - x_1 \\ x_5 &= 2 \quad - x_2 \\ \hline z &= 0 + x_1 + x_2 \end{aligned}$$

```
D = P.initial_dictionary()
view(D)
print "D jest dopuszczalne: "+ str(D.is_feasible())
print "D jest optmalne: " + str(D.is_optimal())
```

$$\begin{aligned} x_3 &= 1 + x_1 - x_2 \\ x_4 &= 3 - x_1 \\ x_5 &= 2 \quad - x_2 \\ \hline z &= 0 + x_1 + x_2 \end{aligned}$$

D jest dopuszczalne: True
D jest optmalne: False

```
print D.possible_entering()
D.enter("x1")
print D.possible_leaving()
D.leave("x4")
view(D)
```

[x1, x2]
[x4]

$$\begin{aligned} x_3 &= 1 + x_1 - x_2 \\ x_4 &= 3 - x_1 \\ x_5 &= 2 \quad - x_2 \\ \hline z &= 0 + x_1 + x_2 \end{aligned}$$

```
D.update()
view(D)
```

$$\begin{aligned} x_3 &= 4 - x_4 - x_2 \\ x_1 &= 3 - x_4 \\ x_5 &= 2 \quad - x_2 \\ \hline z &= 3 - x_4 + x_2 \end{aligned}$$

```
print D.possible_entering()
```

[x2]

```
D.enter("x2")
```

```
view(D)
```

$$\begin{aligned} x_3 &= 4 - x_4 - x_2 \\ x_1 &= 3 - x_4 \\ x_5 &= 2 \qquad - x_2 \\ \hline z &= 3 - x_4 + x_2 \end{aligned}$$

```
D.leave("x5")
```

```
view(D)
```

$$\begin{aligned} x_3 &= 4 - x_4 - x_2 \\ x_1 &= 3 - x_4 \\ x_5 &= 2 \qquad - x_2 \\ \hline z &= 3 - x_4 + x_2 \end{aligned}$$

```
D.update()
```

```
view(D)
```

$$\begin{aligned} x_3 &= 2 - x_4 + x_5 \\ x_1 &= 3 - x_4 \\ x_2 &= 2 \qquad - x_5 \\ \hline z &= 5 - x_4 - x_5 \end{aligned}$$

```
print "D jest dopuszczalne: "+ str(D.is_feasible())
print "D jest optmalne: " + str(D.is_optimal())
```

D jest dopuszczalne: True
D jest optmalne: True