Optimization_graphs

September 11, 2019

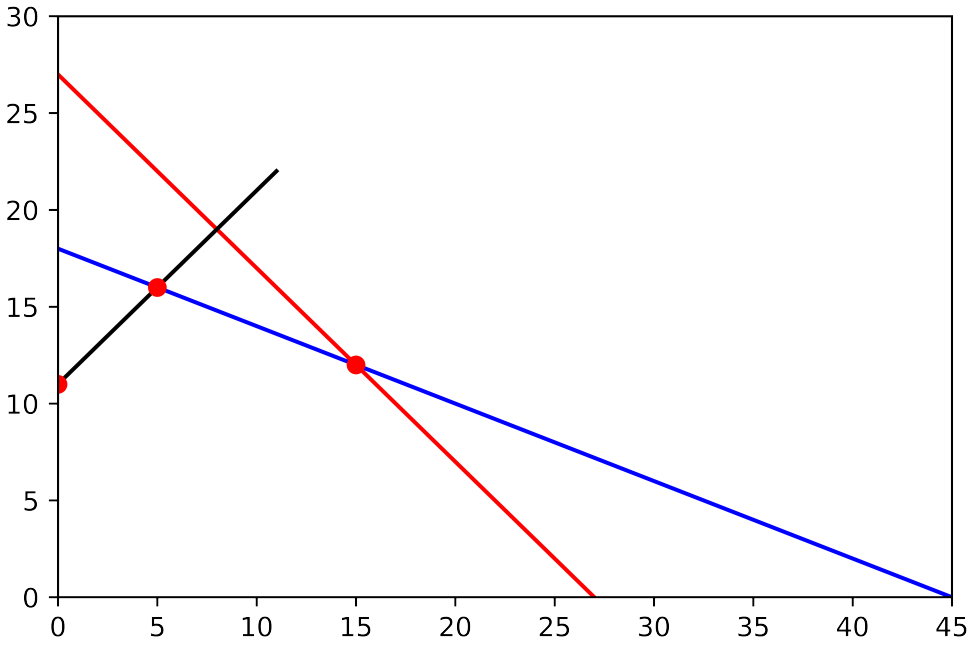
[5]:
```
import numpy as np;
import matplotlib.pyplot as plt;
import matplotlib as mpl;
mpl.rcParams['figure.dpi'] = 600;
```

[8]:
```
arr_original = np.array([[-4, -6, 0, 0, 0, 0],
                         [-1, 1, 1, 0, 0, 11],
                        [1, 1, 0, 1, 0, 27],
                        [2, 5, 0, 0, 1, 90]]);
```

[9]:
```
print(arr_original);
```

```
[[-4 -6  0  0  0  0]
 [-1  1  1  0  0 11]
 [ 1  1  0  1  0 27]
 [ 2  5  0  0  1 90]]
```

[33]:
```
plt.ylim(0, 30);
plt.xlim(0, 45);
plt.plot([90/2, 0], [0, 90/5], "b-");
plt.plot([27, 0], [0, 27], "r-");
plt.plot([0, 11], [11, 22], "k-");
plt.plot([0], [11], "ro");
plt.plot([5], [16], "ro");
plt.plot([15], [12], "ro");
plt.show();
```



[44]:
```
arr_1 = np.copy(arr_original); print(np.min(arr_1[0,:]));
#print(arr_1[1:,1]);
```

```
-6
```

[45]:
```
print(arr_1[1:,5]/arr_1[1:,1]);
```

```
[11. 27. 18.]
```

[46]:
```
arr_1[0,:] = arr_1[0,:] - arr_1[0,1]*arr_1[1,:];
print(arr_1);
```

```
[[-10   0   6   0   0  66]
 [ -1   1   1   0   0  11]
 [  1   1   0   1   0  27]
 [  2   5   0   0   1  90]]
```

[47]:
```
arr_1[2,:] = arr_1[2,:] - arr_1[2,1]*arr_1[1,:];
arr_1[3,:] = arr_1[3,:] - arr_1[3,1]*arr_1[1,:];
print(arr_1);
```

```
[[-10   0   6   0   0  66]
 [ -1   1   1   0   0  11]
 [  2   0  -1   1   0  16]
 [  7   0  -5   0   1  35]]
```

[ ]: