4/5/2020

hw0

```
In [44]:
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
sns.set(style="darkgrid")
In [9]:
############A.11############
A = np.array([[0,2,4],[2,4,2],[3,3,1]])
b = np.array([[-2],[-2],[-4]])
c = np.array([[-1],[-1],[-1]])
In [55]:
########A.11(a)########3
inv A = np.linalq.inv(A)
print(inv_A)
[[ 0.125 -0.625  0.75 ]
 [-0.25 0.75 -0.5]
 [ 0.375 -0.375 0.25 ]]
In [15]:
###########A.11(b)###############
print(np.matmul(inv_A,b))
[[-2.]
 [ 1.]
 [-1.]]
In [16]:
############A.11(b#########
print (np.matmul(A,c))
[[-6]
 [-8]
 [-7]]
In [18]:
```

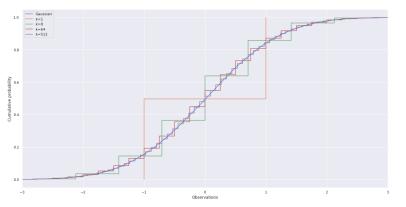
```
In [54]:
```

```
n=int(1/4*1/(.0025)**2)
Z=np.random.randn(n)
plt.figure(figsize=(20,10))
plt.step(sorted(Z), np.arange(1,n+1)/float(n), label = 'Gaussian')
plt.xlim(-3, 3)
n=40000
ks = [1,8,64,512]
yks = []
for k in ks:
    yk = np.sum(np.sign(np.random.randn(n,k)) * np.sqrt(1./k), axis=1)
    yks.append(yk)
    plt.step(sorted(yk), np.arange(1,n+1)/float(n), label = 'k={}'.format(k))

plt.legend(ncol=1, loc='upper left')
plt.ylabel('Cumulative probability', fontsize=12)
plt.xlabel('Values', fontsize=12)
```

## Out[54]:

## Text(0.5, 0, 'Observations')



localhost:8888/lab 1/2 localhost:8888/lab 2/2