```
import random, math
n_trials = 400000
n_hits = 0
var = 0.0
meanObs = 0.0
meanObs2 = 0.0

for iter in range(n_trials):
    x, y = random.uniform(-1.0, 1.0), random.uniform(-1.0, 1.0)
    Obs = 0.0
    if x**2 + y**2 < 1.0:
        n_hits += 1
        Obs = 4.0
    meanObs += Obs
    meanObs2 += Obs**2

var = meanObs2/float(n_trials)-(meanObs/float(n_trials))**2
print(4.0 * n_hits / float(n_trials), meanObs/n_trials, math.sqrt(var) )
```

```
3.13895 3.13895 1.644017304501385
```