## Exam Questions/Data Analysis for Risk and Security Management *Prof. Dr. Dirk Drechsler*

## #7 (Total 17 Points)

[1]

$$\lambda = 40 \ \mu = 30$$

i	$(\lambda/\mu)^i/i!$
0	1,0000
1	1,3333
2	0,8888
Total	3,2221

$$P_0 = \frac{1,0000}{3,2221} = 0,3104 (31,04\%)$$

[2]

$$P_2 = \frac{0,8888}{3,2221} = 0.2758 (27,58\%)$$

[3]

i	$(\lambda/\mu)^i/i!$
3	0,3951
4	0,1317

$$P_2 = 0,2758$$

$$P_3 = 0.3951/(3.2221 + 0.3951) = 0.1092$$

$$P_4 = 0.1317/(3.2221 + 0.3951 + 0.1317) = 0.0351$$

[4]

k=3 with 10,92% of calls receiving a busy signal.