**Question 1**

e^(-y)

**Question 2**

Given three independent binary classifiers (𝐶𝑖 ,𝑖 = 1,2,3) with uncorrelated error rates e1 = 0.1, e2 = 0.3, e3 = 0.3

a) Use Majority voting to find the expected error rate of the ensemble. (Hint: This is not the average value of the errors)

Answer: As the error rates are between the 0,1 the given error rates can be assumed to follow a Bernoulli distribution which takes the value 1 with probability *p* and 0 with probability *q=1-p.* Hence the majority error rate for this case can be calculated using Bernoulli formula

Or the expected square error of *k* ensemble methods can be calculated using *(1/k\*v)+((k-1)/k)\*c*

Where *v* and *c* are the variance and covariance respectively

b) What can be inferred if the assumption of independence is relaxed on the errors?

Answer: The mean classifier error and the distribution of the classifier outputs can/will affect the system. Ensemble error decreases mostly linearly with ensemble size