CS 558, Spring 2018: Quiz 5

NAME:

Problem 1. Consider the formula for determining the required number of RANSAC iterations (under the assumption of sampling with replacement):

$$(1-(1-e)^s)^N = 1-p$$

What do each of the following terms denote

- e:
- s:
- N:
- p:

Based on the above formula, write the expression for the following:

- The probability of a single sampled element being an inlier:
- The probability of a set of S sampled elements being all inliers (i.e. an uncontaminated model):
- The probability of a set of S sampled elements being comprised by at least one outlier (i.e. a contaminated model)
- The probability of consecutively sampling N sets and finding only contaminated models
- The probability of consecutively sampling N sets and finding at least one uncontaminated model