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1. Suppose we have a data set of 2D points and you would like to robustly fit a line to it using RanSaC. Assume we have $\omega=0.20$. How many RanSaC iterations are needed to obtain a 95% confidence in the correctness of the result?
2. Suppose we have a data set of 2D points that fit two different lines. Propose an algorithm that uses RanSaC to compute the parameters of these two lines (assume the data set is noiseless).
3. Suppose we want to use RanSaC to fit 2D points to circles. In this case, what would be the value of n ?
4. If we wanted to use RanSaC to auto-calibrate a stereo system, we would need to determine the quality of the solution to the eight-point algorithm at each iteration. Propose a way to do this.
5. Devise an EM algorithm which can determine n normal component densities. Assume homoscedasticity and that the super-population sample is 1D.