Problem 1.

1. How many non-zero singular values does the Mondrian matrix have?
   Ans. 4
2. What is the rank of the Mondrian matrix?
   Ans. 4
3. Why does the Mondrian matrix have this rank?
   Ans. Because Mondrian matrix is very close to being a singular matrix with only 2 values across the matrix and have only 4 linearly independent rows, hence have smaller rank which is equal to the number of singular values of the matrix.
4. How many non-zero singular values does the husky matrix have?
   Ans. 429
5. What is the rank of the husky matrix?
   Ans. 429
6. Why does the husky matrix have this rank?
   Ans. Husky Matrix has 429 linearly independent rows and which is equal to the number of non-zero singular values. Husky have more variation across the image making it possible to create detailed image, that is why it has the higher rank.