所別：**工業管理研究所碩士班甲.乙組** 科目：**統計學**

1. The specification for a product is (40, 60). The following data of products collected from two production lines.

Line1	45	57	43	50	48	49	38	52	55	47
Line2	40	41	45	50	51	52	44	45	43	46

   Which line is better and why?(20%)

2. $\Phi(t)$ is a standard normal distribution, what is the relation between inter-quantile range(IQR) and standard deviation(σ)?(15%)

9.64	9.39	9.5	9.43	9.25
9.33	9.45	9.36	9.44	9.48
9.11	9.56	9.84	9.61	9.23
9.48	9.68	9.52	9.27	9.42

3. Give a box plot for the above data.(20%)
4. Explain what is the six-sigma process with one sigma shift?(10%) How to compute the defective rate for this process?(10%)
5. What are criteria to say if the estimator of parameters are good?(10%)
6. Give three ways to measure the dispersion of data.(15%)