# Homework 5 <scaling>

1. Prove that:

2. Scale the fitness using (1) linear (2) standard deviation:

Part 1:

We want to transform our distribution fitness by transforming it linearly:

so that:

Average of the new distribution is modified as below:

Using 1°:

Similarly for:

Using 2°:

Part 2:

**Answer**:

fitness=[1 20 10 55 60 30 8];

cc=2;

[scalefitness\_linear, tempfitness\_linear] = GA\_linear\_fit\_scale(fitness,cc)

scalefitness\_stand = GA\_stand\_fit\_scale(fitness,cc)

Results:

scalefitness\_linear =

6.5714 21.3850 13.5884 48.6731 52.5714 29.1816 12.0291

scalefitness\_stand =

21.2863 40.2863 30.2863 75.2863 80.2863 50.2863 28.2863