Problem 1

2. B) Standardized and C) Normalized

Problem 2

3. Log Transformation

Problem 3

Mean for x_1 = 2
Mean for x_2 = -9

Deviations for x_1 = [8−2, 4−2, 0−2, −4−2] = [6 ,2 ,−2, −6]
Deviations for x_2 = [−16+9, −12+9, −10+9, 2+9] = [−7, −3, −1, 11]

Products of deviations: [-42, -6, 2, -66]

Sum of products = -112

Sum of squared deviations for x_1 = 36+4+4+36=80
Sum of squared deviations for x_2 = 49+9+1+121=180

Computing the Pearson correlation coefficient:
r = -112 / (sqrt(80 x 180))
r = -0.933

Problem 4

1. x_1 or 2. x_2 can be removed depending on the target index