Exercise:

Given a sample: X = [10, 7, -22, 4, -9]

1. Calculate the mean, variance and standard deviation
2. Normalize the data points into the range [0, 1]
3. Calculate the mean, variance and standard deviation after normalizing
4. Standardize X s.t. the mean of X is 0 and standard deviation is 1

Note: round the va oating point (e.g., 10.23)

Normalization: $X_{new} = \frac{X - X_{min}}{X_{max} - X_{min}}$

Standardization: $X_{new} = \frac{X - \bar{X}}{s}$