Standard Deviation Practice Problems (with answers)

1. Consider the following three data sets A, B and C.

A = {9,10,11,7,13}

B = {10,10,10,10,10}

C = {1,1,10,19,19}

a. Calculate the mean of each data set.
b. Calculate the standard deviation of each data set.
c. Which set has the largest standard deviation?

2. The frequency table of the monthly salaries of 20 people is shown below.

Salary (in $)	Number of people with this salary
3500	5
4000	8
4200	5
4300	2

a. Calculate the mean of the salaries of the 20 people.
b. Calculate the standard deviation of the salaries of the 20 people.

ANSWERS:

1.

a. mean of Data set A = (9+10+11+7+13)/5 = 10

mean of Data set B = (10+10+10+10+10)/5 = 10

mean of Data set C = (1+1+10+19+19)/5 = 10

b.

Standard Deviation Data set A

$= \sqrt{[\ ((9-10)^2+(10-10)^2+(11-10)^2+(7-10)^2+(13-10)^2)/5\ ]} = 2$

Standard Deviation Data set B

$= \sqrt{[\ ((10-10)^2+(10-10)^2+(10-10)^2+(10-10)^2+(10-10)^2)/5\ ]} = 0$

Standard Deviation Data set C

$= \sqrt{[\ ((1-10)^2+(1-10)^2+(10-10)^2+(19-10)^2+(19-10)^2)/5\ ]} = 8.05$

c. Data set C has the largest standard deviation.

2.

a. Mean= $3955
b. standard deviation= 282 (rounded to the nearest unit)