BIST/STAT 4875/5535 - Nonparametric Methods - Fall 2020
Homework 1: Solution

1. The result

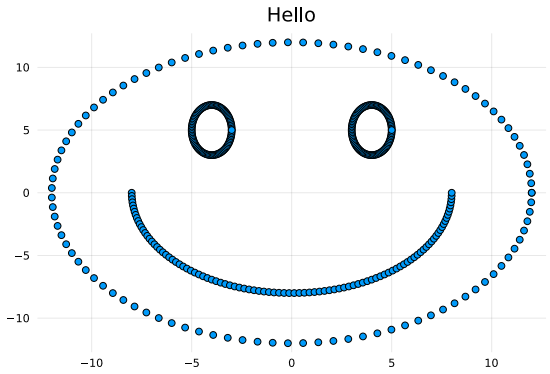
```
(16131, 7479)
```

is printed from the following code.

```
# Run this to install the packages: `import Pkg; Pkg.add("Distributions")`
using Random, Distributions

Random.seed!(2);
z = Normal(0, 1);
x = rand(z, 10);
n = length(x);
a = round(Int64, sum(exp.(x.^3))) * sum(1:n) + round(Int64, sum(abs.(x).^(2.383))^pi*pi);
b = round(Int64, sum(exp.(x.^4))) - sum(1:5n) - round(Int64, sum(abs.(x))/3);
res = (a,b)
```

2. The correlation coefficient between x and y is $r = -0.00051$, but the scatter plot looks like this:



The computation is performed using the following code

```
using DelimitedFiles, Statistics
# You need to make sure the data file is in the working directory
# With Linux and Mac, it is like: cd("/home/homework/hw01/")
# With Windows, it is like: cd("C:\\homework\\hw01")
dat = readdlm("hw01.csv", ',', Any, '\n')
x = dat[:,1]
y = dat[:,2]
corr = round(cor(x, y), digits=5)
using Plots
p = plot(x, y, seriestype=:scatter, axis=false, legend=false, title="Hello")
savefig(p, "face.pdf")
```