Statistics 1601
Homework 1
Due: Thursday, September 20

Complete the following problems in a R Markdown file and submit your compiled PDF.

Problem 1: Indicate which of the variable names listed below are not valid in R and explain why for each.

1. `2018_Revenue`
2. `.2018.Revenue`
3. `.Revenue.2018`
4. `_Revenue_2018`
5. `Revenue2018`
6. `Revenue 2018`
7. `Revenue(2018)`
8. `Revenue_2018`
9. `Revenue.2018`
10. `Revenue.2018.`

Problem 2: Write the code to answer each question below.

(a) The profit Netflix earned from US streaming in Q3 2017 was \$553.9 million coming from 51.3 million US streaming customers. What is their profit per US streaming customer?

(b) For budgeting purposes, it is best to underestimate profit slightly. Use a function to determine the appropriate whole number budgeting estimate for their profit per US streaming customer.

(c) The profit Netflix earned overall in Q3 2017 was \$679.4 million. What percentage of their profit came from their US streaming service that quarter?

(d) The profit Netflix earned from US streaming customers in Q2 2017 was \$559.9 million and the profit they earned overall that quarter was \$608.8 million. Did the percentage of their overall profit due to their US streaming service change from Q2 to Q3?

(e) What was the profit percentage difference from Q2 to Q3 2017? (If you found there to be no difference, you should still write a command that will result with 0.)

(f) In Q3 2017, Netflix reported 107.5 million customers over all their services. Assuming that each customer only uses one of their services, how many customers use a service other than US streaming?

Problem 3: Create, store, and print the following sequences. You may use the concatenate function to combine two sequences, but not as the only mechanism to yield the answer.

(a)
```
[1] "Q1" "Q1" "Q1" "Q1"
```

(b)
```
 [1]  50.0  52.5  55.0  57.5  60.0  62.5  65.0  67.5  70.0  72.5  75.0
[12]  77.5  80.0  82.5  85.0  87.5  90.0  92.5  95.0  97.5 100.0
```

(c)
```
 [1] 2010 2010 2010 2010 2011 2011 2011 2011 2012 2012 2012 2012 2013
[14] 2013 2013 2013 2014 2014 2014 2014 2015 2015 2015 2015 2016 2016
[27] 2016 2016 2017 2017 2017 2017
```

(d)
```
[1] 2016 2016 2016 2016 2017 2017 2017
```

(e)
```
 [1] 1295 1296 1297 1298 1299 1300 1299 1298 1297 1296 1295 1294 1293
[14] 1292 1291 1290
```

(f)
```
[1] 4160 4055 3950 3845 3740 3635 3530
```