

# BSDS 100: Intro to Data Science with R

## Assignment 8

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**Directions:** For all questions in this assignment, write complete sentences and fully answer any question that is asked, and use R to answer each question. Provide all R code and solutions by *knitting* your final RStudio file into a single file named `[your_name].CA8.pdf`. Late assignments will automatically have 10 points deducted, and will not be accepted after the answer key is posted (1 week following the due date).

1. From <https://r4ds.had.co.nz/strings.html> Create regular expressions to find all words from `stringr::words` that:
  - (a) (2 points) Start with a vowel.
  - (b) (2 points) That only contain consonants. (Hint: thinking about matching “not”-vowels.)
  - (c) (2 points) End with ed, but not with eed.
  - (d) (2 points) End with ing or ise.
2. (4 points) Write and test a regular expression that will match a phone number in the format 555-555-5555
3. (6 points) Use `for()` and `if()` to loop through the numbers 1 to 30 and print “divisible by 3” for any that are divisible by 3 and print “not divisible by 3” for any that are not divisible by 3
4. (6 points) Now make a vector of the numbers 1 to 30, and use an `ifelse()` statement to return a vector where 1 is returned if the original number was divisible by 3 and 0 if it was not
5. (3 points) Consider the following loop. What is wrong with it? What could be done to fix it?

```
n <- 0
```

```
while(n < 10){ print("hello world") n <- n - 1 }
```

6. (3 points) Write and test a `switch` function that returns “woof” when passed “dog”, “meow” when passed “cat”, and “???” when passed “fox”