

## Quiz 2: R basis

**Exercise 2.1.** Recall given the radius of a circle  $r$ , we can calculate the perimeter by using formula  $C = 2\pi r$ , and the area by using formula  $A = \pi r^2$ . Assume  $r = 3$ . Calculate the value of perimeter and area.

**Exercise 2.2.** As the natural state, Arkansas has 7 national parks and 52 state parks. How many national or state parks in total at Arkansas?

- Why the code below doesn't work?

```
num_natl_parks = 'seven'  
num_state_parks = 52  
num_total_parks = num_natl_parks + num_state_parks
```

- Please modify the code above.

**Exercise 2.3.**

- Use function `length()` to find how many values in the vector `a` defined below?
- How many values are greater than 1000?
- What is the percentage of values in the vector greater than 1000?

```
a = c(275, 2168.36, 2931.5, 275.5, 399.93, 2, 545.128, 209.76, 400, 50.1499, 150, 1595.978)
```

**Exercise 2.4.** Complete the following tasks.

- Install and load the package `nycflights13`.
- Load the data set `flights`.
- Find the variable names of `flights`.
- Find the dimension of `flights`.
- Display the first 3 rows of `flights`.

**Exercise 2.5.** Complete the following tasks.

- a. Please download the `titanic_train.csv` dataset and import the data set to R. Save it as `Titanic`.
- b. Display the first 5 rows of `Titanic`.
- c. Find the average number of siblings / spouses aboard the Titanic (variable name `SibSp`)
- d. Find the average of `age`. Why `mean(Titanic$age)` doesn't work? Please add `na.rm=TRUE` in `mean()` and retry. Please explain the behavior.