Homework 1 Completion
SUGGESTED, NOT DUE, DO NOT TURN IN

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1 Kooky Kalculations

Build up to a tricky calculation by combining different bits of R code.

1. The "modulus" operator is `%%`. The code `x %% y` outputs the remainder after dividing `x` by `y`. For example, `18 %% 5` outputs `3`. For what positive integers `x` is `x %% y` equal to `0` *only* if `y == x` or `y == 1`? Find some examples. Do these numbers have a name?

2. You can do operations like `+,-,*,/` with lists. See what happens when you run `(1:100) + 5`. Then run `(1:100) %% 2`. What does this code have the computer figure out about the numbers from 1 to 100?

3. Write code to output a vector of "logicals" (`TRUE`s and `FALSE`s) where the nth logical is `TRUE` if n is *even* (hint: your solution will probably use `!`).

4. Read about the `which` function. Write a line of code that finds the indices of the even integers from 1 to 100 (i.e. outputs `2 4 6 8` etc.).

5. You can "multi-index" vectors. For example, `(3:8)[5]` outputs `7`, but what does `(3:8)[c(1,3,5)]` output?

6. Using everything you learned above, write a line of code that computes the sum of the even numbers from 1 to 100.