1. Revel Chapter 5 Exercise 2
2. Use a while loop to write a program that calculates an average. The user will enter -1 to stop.
3. (Mathematics) In number theory, a perfect number is defined as some positive integer whose value is the sum of its positive divisors.
   1. i.e 6 = 1 \* 2 \* 3 (You can always assume 1 is a divisor for this case). Since 1 +2 + 3 = 6 then we say 6 is a perfect number
   2. Write a Java program to display the first 4 perfect numbers. For help look at the primenumber.java file from your lab. Similar concepts are being used.
   3. Hint: The biggest thing that can divide some number is (we are using INTEGER DIVISION here). We need to check that number.
   4. Hint 2: If you keep a running sum of the divisors what happens when the loop finishes?
   5. The first four perfect numbers are: 6,28,496,8128. If you’re curious google the 5th . It is big
   6. I want you to properly declare constants.
4. (Similar to and problem) This is a little bit more challenging than the others, so ask for help
   1. We can approximate the sine of some angle by the following:
      1. Write a for loop that will calculate the sine of some angle(inputted by the user) to 25 terms.
      2. Hints:
         1. How can we keep track of using the plus then minus? Use (-1) to some power it will alternate between positive and negative
         2. For the factorial, we do not want to compute every time a new factorial
            1. 2! = 2 \* 1! (Look at your lab video)
            2. We are only using every other one but you still will want to use the same idea
         3. Ask for help. This question is supposed to be challenging. If you can do this one. You can do the two on your lab.