CECS 282 - Homework 1

Complete these problems on a separate sheet of paper. You may attach a printout of any code you write.
Due date: January 29

1. Reading from *C++ How to Program*:
   (a) Chapter 1.6, 1.9
   (b) *Skim* Chapter 2.2, 2.3, 2.5, 2.6, 2.7
   (c) *Skim* Chapter 4 and 5 *if you need the review*
2. Write a C++ code fragment that seeds a `default_random_engine` with `random_device`, and then generates an integer in the range of 5 to 15, inclusive.
3. For each of the following statements, indicate if the statement would compile (does not contain any compile-time errors) in the Java language and/or the C++ language. Assume that the statements are executed in order, so using the variable `x` always refers to the `int x` declared in the first statement (see the table).

Statement	Compile in C++?	Compile in Java?
`int x = 5;`	√	√
`x = 1.5;`		
`if (x + 1)`		
`char c = (char)('A' + x);`		

4. Which of the following are **NOT** explicitly stated design goals of the C++ language? Mark all that apply.
   (a) Compatibility with programs written in the C language
   (b) "If you don't want feature *x*, you shouldn't have to pay for it in performance"
   (c) Consistent and defined sizes for fundamental variable types
   (d) Using the language for embedded Web browser applications
   (e) Uncompromising speed and efficiency
5. Which of the following are **NOT** fundamental data types in the C++ language? Mark all that apply.
   (a) `char`
   (b) `int`
   (c) `byte`
   (d) `double`
   (e) `long long`
   (f) `long long long`
   (g) `boolean`
   (h) `short`
6. Write a short C++ program that does the following: ask the user to input integers one at a time, repeating until they enter a 0 to stop. (0 will not count as one of the user's inputs.) Output the *average* (mean) of all the numbers entered, *except* for the single largest and smallest values, which you should ignore. Hint: you can and should do this without arrays, lists, or any other data structure. Example:

```
Enter integers, 0 to stop:
5
6
7
4
0
After discaring the low and high, the average is 5.5
```