1) C++ Stream classes
   using www.geeksforgeeks.org/c-stream-classes-structure/

   Topmost class: ios
                    ↳ provides input/output functionalities to all
                      other stream classes
                    ↳ base class for istream, ostream, streambuf

   istream:
   ↳ responsible for input streams and functions such as
     get, getline, read, etc...

   ostream:
   ↳ responsible for output streams and functions such
     as write, put, etc...

   iostream:
   ↳ handles input & output stream.
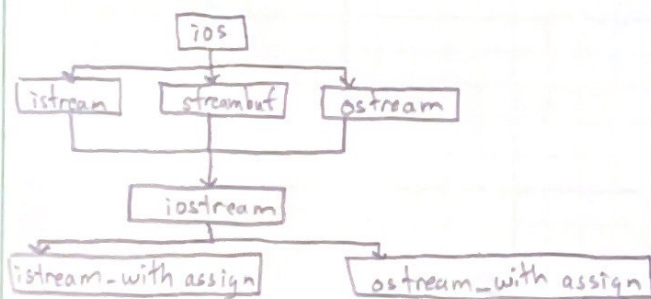   ↳ istream & ostream are inherited into iostream

   istream_withassign
   ↳ allows object assignment for istream
   ↳ gives us "cin"

   ostream_with assign
   ↳ allows object assignment for ostream
   ↳ gives us "cout"

   Heirarchy of Inheritance

```
                    ┌─────┐
                    │ ios │
                    └─────┘
        ┌──────────────┼──────────────┐
   ┌─────────┐   ┌───────────┐   ┌─────────┐
   │ istream │   │ streambuf │   │ ostream │
   └─────────┘   └───────────┘   └─────────┘
                       │
                 ┌───────────┐
                 │ iostream  │
                 └───────────┘
        ┌──────────────┴──────────────┐
┌────────────────────┐      ┌─────────────────────┐
│ istream-with assign│      │ ostream_with assign │
└────────────────────┘      └─────────────────────┘
```

2)
   int* arr1[8]   declares an array of 8 pointers
   int (*arr2)[8] declares a pointer that points to an array of 8 ints
   int *(arr3[8]) declares an array of 8 pointers

3) This program will output the address of the variable b

5) The following program will output 6561
   each function call contains the same x value becauese x is passed
   by reference. Therefore, we get $x \cdot x \cdot x \cdot x \cdot f(x,1) = x \cdot x \cdot x \cdot x \cdot 1 = x^4$
   x is incremented 4 times so we get $(5+4)^4 = 9^4 = 6561$