1. `c++ -o <output_name> <file.cpp>.`

E.g., to update output of this exercise to write to c.out, we can use the following command:

```
c++ -std=c++11 cos4pi.cpp -I/usr/include/python3.8 -lpython3.8 -o
c.out
```

We use the -o option to specify the name of the output file.

2. `$ a.out` is treated by bash as a command and it gives the error "`bash: a.out: command not found`" because no such command exists.

`$ ./a.out` is treated by bash as an executable in current directory (specified by the path "./").

Operationally, `$ a.out` is a command while `$ ./a.out` is an executable in current directory.

3. `$ c++ --version`

```
clang version 10.0.0-4ubuntu1

Target: x86_64-pc-linux-gnu

Thread model: posix

InstalledDir: /usr/bin
```

4. size_t refers to unsigned integer type (cannot take values less than zero). It is used to represent the size of any object in bytes. It is the return type of the sizeof operator and is also used in the standard library to represent sizes and counts. It is also used in loop index because it can store the maximum length of a theoretical object of any size.

5. The shape looks like the letter "W"

6. -I (eye): This is an include path flag. It adds directory to include search path. If there are multiple -I paths provided, these directories are searched in order they are provided before the standard system directories are searched. In case the same directory is in the system include search paths, then it is ignored. In our example, this includes the python header files while compiling.

-l (ell): This is a linker flag. In our example, this links the specified python library.

References:

1. https://www.cplusplus.com/reference/cstring/size_t/

2. https://en.cppreference.com/w/cpp/types/size_t

3. https://clang.llvm.org/docs/ClangCommandLineReference.html#include-path-management

4. https://clang.llvm.org/docs/ClangCommandLineReference.html#linker-flags