Exam I Review
Part 2

20. String Functions

\[
\text{string } s = \text{"stop rolling";}
\]

a) Write a command that prints how many characters are in the string \(s\).
b) Write a command to change the blank space in \(s\) to be 'X'
c) Write a command to print the character 'r' in \(s\).

21. True or False

a) Multi-dimensional arrays are only possible with integral data types (e.g. bool, int)
b) The compiler converts our C++ code to binary code.

22. Drawing Time

- Draw a picture of the array that would be created by the following code

\[
\text{int data[10] = \{1, 1\};}
\]
\[
\text{for (int index = 2; index < 8; ++index )}
\]
\[
\text{data[index] = data[index - 1] + data[index - 2];}
\]
23. Memory Time

- If the starting address of data is 5124 and an int takes up 4 bytes of memory, what address is the seventh element stored at?

```c
int data[10] = {1, 1};
for (int index = 1; index < 9; ++index )
  data[index] = data[index - 1] + data[index - 2];
```

24. Sequential Search

- Suppose you have the following array defined:

```
const int NROWS = 4;
const int NCOLS = 2;
char data[ NROWS ][ NCOLS ] = {
  '9', '2',
  '8', '5',
  '1', '3',
  '4', '8'};
```

Write code to search whether the character ‘3’ is in the array.

25. Vectors

- Write code that will allow the user to enter non-negative whole numbers into a vector. The user will enter 0 when they are done. When the user is done, print out the size of the vector. Use appropriate data types.