Pre-Practical activity (Memo)

1) What is the output for this code:

```
int x = 10;
double y = 3.0;
cout << x / y;
```

a) 3
b) 3.0
c) 3.33333333333
d) Error

2) In c++ what is type promotion?

a) Converting a larger data type into a smaller data type
b) Converting a smaller data type into a larger data type
c) Automatically converting incompatible types during operations
d) None of the above

3) What is the output for this code:

```
char c = 'A';
int i = c + 1;
cout << i;
```

a) ‘B’
b) 66
c) 65
d) Error

4) Which of the following is explicit type casting in c++?

a) `int x = 5.5`
b) `double x = 5`
c) `float x = (float)5.0`
d) `int x = 10`

5) What is the purpose of type casting?

a) To assign values of one data type to variables of another data type
b) To fix syntax errors in code
c) To convert between variables of the same type
d) To enhance the performance of a program

6) Explain the difference between implicit and explicit type conversion?

Implicit type casting happens automatically when the compiler converts 1 data type to another. Explicit type casting happens when the conversion is programmatically specified.

7) Consider the code below:

```
int a = 5;
double b = 2.5;
cout << a + b;
```

a) Explain how type conversion is handled in this case.

Performs implicit type conversion by promoting the int value a to a double because the + operator is used

b) Modify the code so that the result is explicitly cast to an int and display it.

```
int a = 5;
double b = 2.5;
int result = (int)(a + b);
cout << result;
```

8) Write a C++ program that converts a floating-point number to an integer using both implicit and explicit type casting.

```cpp
#include <iostream>
using namespace std;

int main() {
    float f = 7.75;

    int implicitInt = f;

    int explicitInt = (int)f;


    cout << "Implicit float to int: " << implicitInt << endl;
    cout << "Explicit float to int: " << explicitInt << endl;

    return 0;
}
```