

### COMP 1603 – Tutorial/Lab 9

1. What is the output produced by the call `w(1)` of the following recursive function?  
Show your working.

```
void w(int n){
    cout << n << " ";

    if (n < 9){
        w (n + 2);
        cout << n << " ";
    }
}
```

2. Write a recursive C++ function to calculate the power of a number `base` raised to an integer `exponent`.
3. What is the output produced by the call `fun(1, 6)` of the following recursive function?  
Show your working.

```
void fun(int m, int n){
    if (n >= 0){
        fun(m + 2, n - 2);
        cout << n << " ";
        fun(m + 1, n - 3);
    }
}
```

4. Write a recursive C++ function to calculate the sum of the first `n` natural numbers.
5. What is the output produced by the call `mystery(11)` of the following recursive function?  
Show your working.

```
void mystery(int n){
    cout << n << "\t" << endl;
    if (n < 0)
        return;
    else if (n > 4)
        mystery(n - 2);
    else
        mystery(n - 3);
}
```