TASK 1 – MATHEMATICS – WHY MATHS IN CODING?

1.A

PROGRAM:

```
import java.util.Scanner;
public class SquareRoot {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int x = scanner.nextInt();
        int result = 0;
        for (int i = 1; i <= x; i++) {
            if (i * i <= x) {
                result = i;
            } else {
                break;
            }
        }
        System.out.println("Square root of " + x + " rounded down is: " + result);
        scanner.close();
    }
}
```

1.B

PROGRAM:

```
import java.util.Scanner;
public class UglyNumber {
    public static boolean isUgly(int num) {
        if (num <= 0) return false;
        while (num % 2 == 0) {
            System.out.println("Divide by 2: " + num + " ÷ 2 = " + (num / 2));
```

```
            num /= 2;
        }
        while (num % 3 == 0) {
            System.out.println("Divide by 3: " + num + " ÷ 3 = " + (num / 3));
            num /= 3;
        }
        while (num % 5 == 0) {
            System.out.println("Divide by 5: " + num + " ÷ 5 = " + (num / 5));
            num /= 5;
        }
       return num == 1;
    }
public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
       System.out.print("Enter a number: ");
       if (isUgly(input)) {
            System.out.println(input + " is an ugly number.");
        } else {
            System.out.println(input + " is not an ugly number.");
        }
        scanner.close()
  }
}
```

1 C

1.C

PROGRAM:

```
import java.util.Scanner;
public class CC2 {
```

```
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the number of elements: ");
        int n = scanner.nextInt();

        int[] ar = new int[n];
        System.out.println("Enter the array elements:");
        for (int i = 0; i < n; i++) {
            ar[i] = scanner.nextInt();
        }
        int result = 1;
        for (int i = 0; i < n; i++) {
            result *= ar[i];
        }
        System.out.println("Product of array elements: " + result);

        scanner.close();
    }
}
```