2. Program set 1

1. Sum of two integers

```cpp
#include <iostream>
int main() {
    int a, b;
    std::cout << "Enter two integers: ";
    std::cin >> a >> b;

    std::cout << "Sum = " << (a + b) << "\n";

    return 0;
}
```

2. Simple integer calculator (+, -, *, /, %)

```cpp
#include <iostream>

int main() {
    int a, b; char op;
    std::cout << "enter calculation in the format" << std::endl;
    std::cout << "<num1> <operation> <num2>" << std::endl;
    std::cin >> a >> op >> b;

    if (op == '+') std::cout << a + b << std::endl;
    else if (op == '-') std::cout << a - b << std::endl;
    else if (op == '*') std::cout << a * b << std::endl;
    else if (op == '/') {
        if (b == 0) std::cout << "Division by zero!" << std::endl;
        else std::cout << a / b << std::endl;
    } else if (op == '%') {
        if (b == 0) std::cout << "Modulo by zero!" << std::endl;
        else std::cout << a % b << std::endl;
    } else std::cout << "Unknown operator" << std::endl;

    return 0;
}
```

3. Maximum of three numbers

```cpp
#include <iostream>

int main() {
    int a, b, c;
    std::cout << "Enter three integers: ";
    std::cin >> a >> b >> c;
```

```
    int m = a;
    if (b > m) m = b;
    if (c > m) m = c;
    std::cout << "Maximum of the three = " << m << std::endl;

    return 0;
}
```

4. Calculate grade from marks out of 100

```
#include <iostream>

int main() {
    int m;
    std::cout << "Enter mark (0-100): ";
    std::cin >> m;

    if (m < 0 || m > 100) std::cout << "Invalid" << std::endl;
    else if (m >= 90) std::cout << "Grade: A" << std::endl;
    else if (m >= 80) std::cout << "Grade: B" << std::endl;
    else if (m >= 70) std::cout << "Grade: C" << std::endl;
    else if (m >= 60) std::cout << "Grade: D" << std::endl;
    else std::cout << "Grade: F" << std::endl;

    return 0;
}
```

5. Check range of a number

```
#include <iostream>
int main() {
    int x;
    std::cout << "Enter a number (1..10): ";
    std::cin >> x;

    if (x >= 1 && x <= 10)
    {
        std::cout << "In range" << std::endl;
    } else {
        std::cout << "Out of range" << std::endl;
    }

    return 0;
}
```

6. Multiplication table

```cpp
#include <iostream>

int main() {
    int n;
    std::cout << "Enter an integer: ";
    std::cin >> n;

    for (int i = 1; i <= 10; ++i)
        std::cout << n << " x " << i << " = " << n * i << std::endl;

    return 0;
}
```

7. Fibonacci sequence

```cpp
#include <iostream>

int main() {
    int n;

    std::cout << "Enter number of terms: ";
    std::cin >> n;
    if (n > 0)
    {
        int a = 0, b = 1;
        for (int i = 1; i <= n; ++i)
        {
            std::cout << a << (i == n ? '\n' : ' ');
            int next = a + b;
            a = b; b = next;
        }
    }
    else
    {
        std::cout << "Number of terms not greater than zero" <<
        std::endl;
    }


    return 0;
}
```