

```
#include <iostream>
#include <fstream>
#include <string>
#include <map>

using namespace std;

typedef std::map<int, string> roman_map;

string operator*(string const& a, int n);
string latin_to_roman(int lat_num);

string operator*(string const& a, int n)
{
    string result;

    while ( n --> 0 )
        result += a;

    return result;
}
```

```

int main(int argc, char* argv[])
{
    int latin_number;
    ifstream* infile = 0;
    istream* in = &cin;

    if (argc == 2)
    {
        infile = new ifstream(argv[1]);

        if ( ! *infile )
        {
            cerr << "File '" << argv[1]
                 << "' could not be opened."
                 << endl;
        }
        else
        {
            in = infile;
        }
    }

    while (*in >> latin_number)
    {
        cout << latin_number << " = "
             << latin_to_roman(latin_number)
             << endl;
    }

    delete infile;

    return 0;
}

```

```

string latin_to_roman(int lat_num)
{
    roman_map translation;

    translation[1] = "I";
    translation[5] = "V";
    translation[9] = "IX";
    translation[10] = "X";
    translation[50] = "L";
    translation[90] = "XL";
    translation[100] = "C";
    translation[500] = "D";
    translation[900] = "CM";
    translation[1000] = "M";

    string rom_str;

    roman_map::reverse_iterator it;

    for (it = translation.rbegin();
         it != translation.rend(); ++it)
    {
        string glyph = (*it).second;
        int value = (*it).first;

        if (lat_num >= value)
        {
            rom_str += glyph * (lat_num / value);
            lat_num %= value;
        }
    }
    return rom_str;
}

```