1. **Write a code in C++ to take one value in integer datatype and second value in float datatype from user now add both values. Print both values in float datatype and their sum in integer.**
   Code:

```cpp
#include <iostream>
using namespace std;
int main()
{
	int num1, sum;
	float num2, fnum1;
	cout << "Enter the first number: ";
	cin >> num1;
	cout << "Enter the second number: ";
	cin >> num2;
	sum = num1 + num2;
	fnum1 = (float)num1;
	cout << "Sum of Numbers: " << sum;
	cout << "\nFirst number in float: " << fnum1;
	cout << "\nSecond number in float: " << num2;

	return 0;
}
```

   Output:

```
Enter the first number: 12
Enter the second number: 13.25
Sum of Numbers: 25
First number in float: 12
Second number in float: 13.25
```

2. **Write a code in C++ to take radius in float datatype. Calculate volume of sphere $\frac{4}{3}\pi r^3$.**
   Code:

```cpp
#include <iostream>
#include<math.h>
using namespace std;

#define PI 3.142

int main()
{
	float rad, Vol;
	cout << "Enter the radius of sphere: ";
	cin >> rad;
	Vol = (4.0 / 3.0) * PI * pow(rad,3);
	cout << "Volume of Sphere: " << Vol;
	cout << endl;
	return 0;
}
```

   Output:

```
Enter the radius of sphere: 7.66
Volume of Sphere: 1882.92
```

3. **Write a code in C++ to take integer values, divide them and print answer with decimal points.**
   Code:

```cpp
#include <iostream>
#include<math.h>
using namespace std;

int main()
{
	int num1, num2;
	float res;
	cout << "Enter the first number: ";
	cin >> num1;
	cout << "Enter the second number: ";
	cin >> num2;
	res = (float) num1 / num2;
	cout << "Result: " << res;
	cout << endl;
	return 0;
}
```

   Output:

```
Enter the first number: 63
Enter the second number: 5
Result: 12.6
```

4. **Write a program in C++ to compute quotient and remainder.**
   Code:

```cpp
#include <iostream>
#include<math.h>
using namespace std;

int main()
{
	int num1, num2, rem, q;
	cout << "Enter the first number: ";
	cin >> num1;
	cout << "Enter the second number: ";
	cin >> num2;
	q = num1 / num2;
	rem = num1 % num2;
	cout << "Quotient: " << q;
	cout << "\nRemainder: " << rem;
	cout << endl;
	return 0;
}
```

   Output:

```
Enter the first number: 53
Enter the second number: 12
Quotient: 4
Remainder: 5
```

5. **Write a program in C++ to swap two numbers first number has an integer data type and the second number has a double datatype.**
Code:

```cpp
#include <iostream>
#include<math.h>
using namespace std;

int main()
{
	int num1, temp;
	double num2;
	cout << "Enter the first number(integer type): ";
	cin >> num1;
	cout << "Enter the second number(double type): ";
	cin >> num2;
	temp = num1;
	num1 = (int)num2;
	num2 = (double)temp;
	cout << "First number: " << num1;
	cout << "\nSecond number: " << num2;
	cout << endl;
	return 0;
}
```

Output:

```
Enter the first number(integer type): 45
Enter the second number(double type): 56.34
First number: 56
Second number: 45
```

6. **Write a program in C++ to calculate your GPA. Google search for the formula.**
Code:

```cpp
#include <iostream>
#include<math.h>
using namespace std;

int main()
{
	int c_cal, c_fop, c_lca, c_his, c_psp, t_credit_hour;
	float g_cal, g_fop, g_lca, g_his, g_psp, gpa;
	cout << "Enter the calculus credit hour: ";
	cin >> c_cal;
	cout << "Enter the grade in calculus: ";
	cin >> g_cal;
	cout << "Enter the fop credit hour: ";
	cin >> c_fop;
	cout << "Enter the grade in fop: ";
	cin >> g_fop;
	cout << "Enter the lca credit hour: ";
	cin >> c_lca;
	cout << "Enter the grade in lca: ";
	cin >> g_lca;
	cout << "Enter the history credit hour: ";
	cin >> c_his;
	cout << "Enter the grade in history: ";
```

```
        cin >> g_his;
        cout << "Enter the psp credit hour: ";
        cin >> c_psp;
        cout << "Enter the grade in psp: ";
        cin >> g_psp;
        t_credit_hour = c_cal + c_fop + c_psp + c_his + c_lca;
        gpa = ((c_cal * g_cal) + (c_fop * g_fop) + (c_his * g_his) + (c_lca
* g_lca) + (c_psp * g_psp)) / t_credit_hour;
        cout << "GPA: " << gpa;
        cout << endl;
        return 0;
}
```

Output:

```
Enter the calculus credit hour: 3
Enter the grade in calculus: 3
Enter the fop credit hour: 3
Enter the grade in fop: 4
Enter the lca credit hour: 4
Enter the grade in lca: 2.5
Enter the history credit hour: 2
Enter the grade in history: 3.5
Enter the psp credit hour: 4
Enter the grade in psp: 2.0
GPA: 2.875
```