

## main.cpp File Reference

```
#include <iostream>
#include <cassert>
#include <cmath>
#include <windows.h>
#include <iomanip>
```

### Macros

```
#define MODE
    Use for debug mode. More...

#define _FAIL_
    SetConsoleTextAttribute(GetStdHandle(STD_OUTPUT_HANDLE), BACKGROUND_RED);
    Use for painting background in red color in debug mode. More...

#define _PASSED_
    SetConsoleTextAttribute(GetStdHandle(STD_OUTPUT_HANDLE), BACKGROUND_GREEN);
    Use for painting background in green color in debug mode. More...

#define unittest(calc_value, real_value)
    Use for testing program. More...
```

### Functions

```
double linear_equation (double a, double b, double &x)
    It solves linear equations : ax+b=0. More...

double quadratic_equation (double a, double b, double c, double &x1, double &x2)
    It solves quadratic equations : ax^2+bx+c=0. More...

int main ()
```

### Macro Definition Documentation

#### ♦ \_FAIL\_

```
#define _FAIL_ SetConsoleTextAttribute(GetStdHandle(STD_OUTPUT_HANDLE), BACKGROUND_RED);
```

Use for painting background in red color in debug mode.

#### ♦ \_PASSED\_

```
#define _PASSED_ SetConsoleTextAttribute(GetStdHandle(STD_OUTPUT_HANDLE), BACKGROUND_GREEN);
```

Use for painting background in green color in debug mode.

#### ♦ MODE

```
#define MODE
```

Use for debug mode.

#### ♦ unittest

```
#define unittest(` calc_value,
                  real_value
                )
```

## Macro Definition Documentation

### ♦ \_FAIL\_

```
#define _FAIL_ SetConsoleTextAttribute(GetStdHandle(STD_OUTPUT_HANDLE), BACKGROUND_RED);
```

Use for painting background in red color in debug mode.

### ♦ \_PASSED\_

```
#define _PASSED_ SetConsoleTextAttribute(GetStdHandle(STD_OUTPUT_HANDLE), BACKGROUND_GREEN);
```

Use for painting background in green color in debug mode.

### ♦ MODE

```
#define MODE
```

Use for debug mode.

### ♦ unittest

```
#define unittest( calc_value,  
                real_value  
            )
```

#### Value:

```
if (calc_value!=real_value)\n{\n    _FAIL_ std::cout<<"[TEST FAILED] ";\n}\nelse\n{\n    _PASSED_ std::cout<<"[TEST PASSED] ";\n}\nstd::cout<<std::setw(5)<<calc_value<<" "<<std::setw(5)<<real_value<<" ";\nstd::cout<<_FILE_<< "("<<_LINE_<<")"<<std::endl;\nSetConsoleTextAttribute(GetStdHandle(STD_OUTPUT_HANDLE), FOREGROUND_RED | FOREGROUND_GREEN | FOREGROUND_BLUE);
```

Use for testing program.

If any test is failed background is red. Otherwise background is green.

#### Parameters

[in] **calc\_value** Calculated value  
[in] **real\_val** Real value

## Function Documentation

### ♦ linear\_equation()

```
double linear_equation ( double a,  
                        double b,  
                        double & x  
                      )
```

It solves linear equations :  $ax+b=0$ .

**Parameters**

[out] **x** Solution, if it exists.

**Returns**

Amount of solutions. (1/0/Inf)

◆ **main()**

```
int main ( )
```

◆ **quadratic\_equation()**

```
double quadratic_equation ( double a,  
                           double b,  
                           double c,  
                           double & x1,  
                           double & x2  
                         )
```

It solves quadratic equations :  $ax^2+bx+c=0$ .

**Parameters**

[out] **x1** Greatest solution, if it exists.

[out] **x2** Other solution, if it exists.

**Returns**

Amount of solutions. (2/0/Inf)