题目一

#include<iostream>

using namespace std;

class ellipse

{

private:

double a, b, x, y;

public:

ellipse(double aa, double bb, double xx, double yy) :a(aa), b(bb), x(xx), y(yy){}

double area(){ return 3.1415926\*a\*b; }

};

int main()

{

cout << "请输入圆心坐标：";

double a, b, x, y;

cin >> x >> y;

cout << "请输入半长轴，半短轴：";

cin >> a >> b;

ellipse el(a, b, x, y);

cout << "该椭圆的面积是：" << el.area() << endl;

return 0;

}

题目三

#include<iostream>

using namespace std;

class rational

{

private:

int a, b;

int Gcd(int M, int N)

{

int Rem;

while (N > 0)

{

Rem = M % N;

M = N;

N = Rem;

}

return M;

}

void simp(int \*p, int \*q)

{

int a;

a = Gcd(\*p, \*q);

\*p = (\*p) / a;

\*q = (\*q) / a;

}

public:

rational() :a(0), b(1){}

void add(int a1, int b1, int a2, int b2);

void mult(int a1, int b1, int a2, int b2);

void sub(int a1, int b1, int a2, int b2);

void div(int a1, int b1, int a2, int b2);

void printfrac()

{

if (b != 1)

{

cout << a << "/" << b << endl;

}

else cout << a;

}

void printflo(){ cout << a / b << endl; }

};

void rational::add(int a1, int b1, int a2, int b2)

{

simp(&a1, &b1);

simp(&a2, &b2);

a = a1\*b2 + a2\*b1;

b = b1\*b2;

simp(&a, &b);

}

void rational::mult(int a1, int b1, int a2, int b2)

{

simp(&a1, &b1);

simp(&a2, &b2);

simp(&a1, &b2);

simp(&a2, &b1);

a = a1\*a2;

b = b1\*b2;

}

void rational::sub(int a1, int b1, int a2, int b2)

{

simp(&a1, &b1);

simp(&a2, &b2);

a = a1\*b2 - a2\*b1;

b = b1\*b2;

simp(&a, &b);

}

void rational::div(int a1, int b1, int a2, int b2)

{

simp(&a1, &b1);

simp(&a2, &b2);

simp(&a1, &b2);

simp(&a2, &b1);

a = a1\*b2;

b = b1\*a2;

}

int main()

{

cout << "请输入运算类型：";

char str[10];

cin >> str;

while (strcmp(str, "加法") != 0 && strcmp(str, "减法") != 0 && strcmp(str, "乘法") != 0 && strcmp(str, "除法") != 0)

{

cout << "您的输入不符合要求，请重新输入：";

cin >> str;

}

int a1, a2, b1, b2;

cout << "请输入第一个分数的分子和分母：";

cin >> a1 >> b1;

cout << "请输入第二个分数的分子和分母：";

cin >> a2 >> b2;

char way[10];

cout << "请输入输出方式：";

cin >> way;

while (strcmp(way, "分数") != 0 && strcmp(way, "浮点数") != 0)

{

cout << "您的输入不符合要求，请重新输入：";

cin >> way;

}

rational rat;

if (strcmp(str, "加法") == 0)

{

cout << a1 << "/" << b1 << "+" << a2 << "/" << b2 << "=";

rat.add(a1, b1, a2, b2);

}

if (strcmp(str, "减法") == 0)

{

cout << a1 << "/" << b1 << "-" << a2 << "/" << b2 << "=";

rat.sub(a1, b1, a2, b2);

}

if (strcmp(str, "乘法") == 0)

{

cout << a1 << "/" << b1 << "\*" << a2 << "/" << b2 << "=";

rat.mult(a1, b1, a2, b2);

}

if (strcmp(str, "除法") == 0)

{

cout << "(" << a1 << "/" << b1 << ")" << "/" << "(" << a2 << "/" << b2 << ")" << "=";

rat.div(a1, b1, a2, b2);

}

if (strcmp(way, "分数") == 0)rat.printfrac();

else rat.printflo();

return 0;

}

题目五

#include<iostream>

using namespace std;

const float pi=3.1415926;

class pipe

{

private:

float r, R, h, den;

public:

pipe(float rr,float RR,float hh,float dd):r(rr),R(RR),h(hh),den(dd){}

float volume() { return pi\*R\*R\*h; }

float cubage() { return pi\*r\*r\*h; }

float sarea() { return 2 \* pi\*(R\*R - r\*r) + 2 \* pi\*h\*(r + R); }

float weight() { return den\*pi\*h\*(R\*R - r\*r); }

void print()

{

cout << "容积：" << cubage() << endl;

cout << "总体积：" << volume() << endl;

cout << "表面积：" << sarea() << endl;

cout << "重量：" << weight() << endl;

}

~pipe() { cout << "堆区空间已释放" << endl; }

};

int main()

{

float r, R, h, den;

cout << "请输入水管内径：";

cin >> r;

cout << "请输入水管外径：";

cin >> R;

while (r > R)

{

cout << "数据输入有误，请重新输入" << endl;

cout << "请输入水管内径：";

cin >> r;

cout << "请输入水管外径：";

cin >> R;

}

cout << "请输入水管长度：";

cin >> h;

cout << "请输入水管材料密度：";

cin >> den;

pipe p(r, R, h, den);

p.print();

return 0;

}

题目六