﻿#include <iostream>

using namespace std;

struct PhanSo

{

int tuso;

int mauso;

};

void NhapPhanSo ( PhanSo &ps)

{

cout <<" Nhap tu so: ";

cin >> ps.tuso;

cout <<" Nhap mau so: ";

cin >> ps.mauso;

}

void XetDau ( PhanSo &ps)

{

if ( ps.tuso < 0)

{

if ( ps.mauso < 0)

{

ps.tuso = -(ps.tuso);

ps.mauso = -(ps.mauso);

}

}

else

if ( ps.mauso < 0)

{

ps.tuso = -(ps.tuso);

ps.mauso = -(ps.mauso);

}

}

void XuatPhanSo ( PhanSo ps)

{

XetDau(ps);

if (( ps.mauso) == 0)

cout <<" Loi chia cho 0\n";

else

cout << ps.tuso <<"/" << ps.mauso;

}

int UCLN ( int a, int b)

{

if ( b == 0)

return a;

return UCLN(b, a%b);

}

void RutGon ( PhanSo &ps)

{

int uc = UCLN(ps.tuso, ps.mauso);

ps.tuso /= uc;

ps.mauso /= uc;

}

PhanSo Tong ( PhanSo ps1, PhanSo ps2)

{

PhanSo kq;

kq.tuso = ps1.tuso \* ps2.mauso + ps2.tuso \* ps1.mauso;

kq.mauso = ps1.mauso \* ps2.mauso;

return kq;

}

PhanSo Hieu ( PhanSo ps1, PhanSo ps2)

{

PhanSo kq;

kq.tuso = ps1.tuso \* ps2.mauso - ps2.tuso \* ps1.mauso;

kq.mauso = ps1.mauso \* ps2.mauso;

return kq;

}

PhanSo Tich ( PhanSo ps1, PhanSo ps2)

{

PhanSo kq;

kq.tuso = ps1.tuso \* ps2.tuso;

kq.mauso = ps1.mauso \* ps2.mauso;

return kq;

}

PhanSo Thuong ( PhanSo ps1, PhanSo ps2)

{

PhanSo kq;

kq.tuso = ps1.tuso \* ps2.mauso;

kq.mauso = ps1.mauso \* ps2.tuso;

return kq;

}

int main ()

{

PhanSo ps1, ps2, pskq;

cout <<" Nhap tu so va mau so cho phan so thu nhat: \n";

NhapPhanSo(ps1);

cout <<" Nhap tu so va mau so cho phan so thu hai: \n";

NhapPhanSo(ps2);

cout <<" Tong hai phan so la: ";

XuatPhanSo(ps1);

cout <<" + ";

XuatPhanSo(ps2);

cout <<" = ";

pskq = Tong(ps1, ps2);

RutGon (pskq);

XuatPhanSo(pskq);

cout << endl;

// Hieu hai phan so

cout <<" Hieu hai phan so la: ";

XuatPhanSo(ps1);

cout <<" - ";

XuatPhanSo(ps2);

cout <<" = ";

pskq = Hieu(ps1, ps2);

RutGon (pskq);

XuatPhanSo(pskq);

cout << endl;

// Tich hai phan so

cout <<" Tich hai phan so la: ";

XuatPhanSo(ps1);

cout <<" \* ";

XuatPhanSo(ps2);

cout <<" = ";

pskq = Tich(ps1, ps2);

RutGon (pskq);

XuatPhanSo(pskq);

cout << endl;

// Thuong hai phan so

cout <<" Thuong hai phan so la: ";

XuatPhanSo(ps1);

cout <<" / ";

XuatPhanSo(ps2);

cout <<" = ";

pskq = Thuong(ps1, ps2);

RutGon (pskq);

XuatPhanSo(pskq);

cout << endl;

system ("pause");

return 0;

}