//Determines whether a round pizza or a rectangular pizza is the best buy.

#include <iostream>

double unitprice(int diameter, double price);

//Returns the price per square inch of a round pizza.

//The formal parameter named diameter is the diameter of the pizza

//in inches. The formal parameter named price is the price of the pizza.

double unitprice(int length, int width, double price);

//Returns the price per square inch of a rectangular pizza

//with dimensions length by width inches.

//The formal parameter price is the price of the pizza.

int main()

{

using namespace std;

int diameter, length, width;

double price\_round, unit\_price\_round,

price\_rectangular, unitprice\_rectangular;

cout << "Welcome to Pizza Consumers Union.\n";

cout << "Enter the diameter in inches"

<< " of a round pizza: ";

cin >> diameter;

cout << " Enter the price of a round pizza: $";

cin >> price\_round;

cout << "Enter the length and width in inches"

<< " of a rectangular pizza: ";

cin >> length >> width;

cout << "Enter the price of a rectangular pizza: $";

cin >> price\_rectangular;

unitprice\_rectangular =

unitprice(length, width, price\_rectangular);

unit\_price\_round = unitprice(diameter, price\_round);

cout.setf(ios::fixed);

cout.setf(ios::showpoint);

cout.precision(2);

cout << endl

<< "Round pizza: Diameter = "

<< "Price = $" << price\_round

<< " Per square inch = $" << unit\_price\_round

<< endl

<< "Rectangular pizza: Length = "

<< length << " inches\n"

<< "Rectangular pizza: Width = "

<< width << " inches\n"

<< "Price = $" << price\_rectangular

<< " Per square inch = $" << unitprice\_rectangular

<< endl;

if (unit\_price\_round < unitprice\_rectangular)

cout << "The round one is better buy.\n";

else

cout << "The rectangular one is the better buy.\n";

cout << "Buon Appetito!\n";

return 0;

}

double unitprice(int diameter, double price)

{

const double PI = 3.14159;

double radius, area;

radius = diameter / static\_cast<double>(2);

area = PI \* radius \* radius;

return (price / area);

}

double unitprice(int length, int width, double price)

{

double area = length \* width;

return (price / area);

}