## Problem ID: 12

## Problem Name: Barrel, Barrel, Barrel

## Description: The Big British Brass Barrel Consortium (BBBBC) has a lot of barrels (made of brass). Every day they receive a large set of orders from other companies for their barrelling needs. Each company will send them a list of different fluids that they have, for which they need barrels to transport the fluids. The various amounts of fluids will be specified in terms of their volume in cubic metres. The BBBBC have a large stock of barrels and they store the height and diameter of their barrels in a database. Every day they need to work out if they have enough barrels in stock to fulfil the orders. If they don’t then they need to compile a list of the number and capacity of barrels that they’ll need to borrow from their competitors. Propose a solution to solve this problem.

## UB Number: 14031264

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The Big British Brass Barrel Consortium Company has many barrels and they provide barrels to other companies according to their requirement. I make BBBBC method and give it initial value and it also do some conversions. I assume that they have 100 barrels in their stock.   
  
Similarly, when companies send the list of fluids that i get input from company in main method and give to BBBBC as an argument. After that, I check the possibilities of BBBBC own stock according to the company’s necessity. So when the company send the order of the fluids then i pass this order as an argument to BBBBC method. Then i specified the order in the form of volume in cubic meters. According to unit-conversion website1, **1m3**=**219.969 gallons,** and **1 barrel** =**36 imperial gallons capacity**. I make conversions and check all possibilities of barrels in stock, and return result to main method.  
  
Likewise, the BBBBC convert this order into required barrels as in this way they can check their stock that how much they keep barrels in their stock with suitable capacity. When the BBBBC have enough barrels then they work out to compensate demand of the company. If the company require barrel with different capacity then I get also input from main of **height,** **upper and lower radius** from main method. In this way, I can find suitable barrel for company need. It has two different radius one at top and bottom and other at the middle. The formula used to calculate volume of the barrels is,   
**Barrel Volume = (H\*Pi\*(2r12+r22)/3)**  
  
At the end after conversions, then the BBBBC method check their own stock. If the demand of company is equal or less than the stock then the BBBBC will provide the barrels to the company. If the company need more than the BBBC stock barrels, than BBBBC will arrange a list of barrels and capacity of different barrels and purchase from their contestants.

Void main (){ this is main method here we get inputs from company and specific radiuses and height.

Initialize variable **order**;

Get input from company (order);

We call method BBBBC and we make object call\_object=new BBBC ();

For specific capacity of barrels need then we also get input radi1, radi2 and height;

And we also pass as an argument to method like call\_object(radi,radi2,height,order);

}

Public BBBBC is method that convert values of cubic m3 (double order, double radi1, double radi2, double height)  
{  
We assume we have 100 barrels in our stock

Stock=100;  
Here we convert cubic m3 into gallons and store in variable.As we know 1m3=219ballons that’s why

Value1=order\*219.969;

Barrel\_value = (height\*Pi\*(2radi2+radi2)/3); //we assume in program that 1 barrel store =36 gallons s  
As I know **approximately** 1bbl=36gallons and in this way I can find the values of barrels that necessary for company

Store0=36;  
Store1 =Value1/store0;  
Approximately Store1 total number of barrels that is require a company;

If(Stock>=Store1)

Stock = stock –Store1;

Else   
No sufficient barrels now .We get others barrels from Competitors; Here if company need different type of barrels then we can use this formula to find suitable barrels

return Stock;

}

**Referance:**

[http://www.metric-conversions.](http://www.metric-conversions.org/volume/cubic-meters-to-uk-gallons.htm)

http://www.unit-conversion.info/volume.html

[http://www.onlineconversion.](http://www.onlineconversion.com/object_volume_barrel.htm)

http://www.metric-conversions.org/metric-conversion-table.htm

http://www.had2know.com/academics/barrel-volume-equation-calculator.html