COP 3223 Program #2: Pizza Shack

In order to show that the basic skills we are learning could be used in practical applications, I'll theme our python assignments for writing programs that aid running a fictitious pizza joint called Pizza Shack. Hopefully in these contrived examples, you'll see how everyday software uses some of the basic components we're learning in COP 3223.

Program A: How Much Dough to Order (dough.py)
The weight of dough (in pounds) necessary for a pizza shop is based on the sum of the areas of the top surfaces of the pizzas sold. For this program, your job will be assisting Pizza Shack in determining how much dough it should order for the week. Use the following constant in your program:

```
DOUGH_PER_SQFT = 0.75
```

Pizza Shack will have small, medium and large pizzas, but they want the ability to change the radii of these pizza sizes (in inches), so your program will have to read in these three values as input from the user.

Your program will also prompt the user to enter how many small, medium and large pizzas are expected to be sold during the week.

Using these six input values, your program should calculate how many pounds of dough to order to make the pizzas!

Please use the constant `math.pi` to aid in your calculation of each pizza's top surface area and go ahead and set up another constant

```
INCHES_PER_FEET = 12
```

to aid with necessary unit conversions. You may assume the user will enter reasonable values for each of the six input prompts. All six input are guaranteed to be positive integers, but your result should be a floating point value.

Sample Run (User input in bold and italics)
```
What is the radius of your small pizza, in inches?
8
What is the radius of your medium pizza, in inches?
10
What is the radius of your large pizza, in inches?
12
How many small pizzas do you expect to sell this week?
40
How many medium pizzas do you expect to sell this week?
100
How many medium pizzas do you expect to sell this week?
200
You need to order 676.7514174608013 pounds of dough this week.
```

Note: Your answer doesn't need to match exactly, but it should be within .01 of what's listed in the sample above.

Program B: Buy One, Get One Free (bogo.py)

You're running a special for Pizza Shack, a simple buy one get one free offer on pizzas. Write a program that prompts the user for the regular price of a single pizza (floating point number) and the number of pizzas they want to buy (positive integer), and prints out the total cost of their order.

Sample Program Run (User Input in Bold and Italics)

```
What is the regular cost of one pizza?
10.99
How many will you be buying for the BOGO?
12
Your total is $65.94.
```

Sample Program Run (User Input in Bold and Italics)

```
What is the regular cost of one pizza?
10.99
How many will you be buying for the BOGO?
7
Your total is $43.96.
```

Note: Please read about how to use the sep specifier in a print statement to avoid a space between the dollar sign and the price.

Program C: Group Orders (group.py)

You have decided to offer different discounts for group orders, depending on the total price of the order, according to the following chart:

Order Value	Percentage Discount
Under $100	0
At least $100 and less than $300	10
At least $300	15

Here are the prices of each size of pizza:

Size	Price
Small	$6.99
Medium	$9.99
Large	$12.99

Write a program that asks the user how many of each pizza they will be buying (non-negative integers) and prints out the total cost of their order, with the appropriate discount given. Please apply the sales tax of 6.5% to the discounted price of the order when printing the final cost. To this end, please use the following constant:

```
SALES_TAX_PERC = 6.5
```

Sample Program Run (User Input in Bold and Italics)
```
How many small pizzas do you want?
5
How many medium pizzas do you want?
5
How many large pizzas do you want?
5
The cost of your order is $ 143.63122500000003.
```

Sample Program Run (User Input in Bold and Italics)
```
How many small pizzas do you want?
0
How many medium pizzas do you want?
20
How many large pizzas do you want?
30
The cost of your order is $533.644875.
```

Note: Your answer doesn't need to match exactly, but it should be within .01 of what's listed in the sample above.

Deliverables

Please submit three separate .py files for your solutions to these problems via WebCourses by the designated due date:

Program A: **dough.py**
Program B: **bogo.py**
Program C: **group.py**