**Paint Calculator**

**Open PaintCalculatorAreaOnly from Unit 1.**

**Save as: PaintCalculator.java in Unit 2**

We created PaintCalculatorAreaOnly in Unit 1 that calculated the area to be painted. We will be adding onto this program.

**Add to your program using the instructions below:**

Calculate the number of cans of paint needed to paint the walls of the room.

A gallon of paint will cover 300 square feet.

A quart of paint will cover 75 square feet.

**Only full cans of paint:**

* *You will only be able to purchase* ***full cans of paint*** *(no fractions of a can).* So if you calculate that you need 1.2 gallons, you would need to purchase 2 gallons.
* You may make use of if statements or any built-in Java method that you can find that will round the number of cans up to the next integer. For example, although not tested on the AP test, there are Math.floor and Math.ceil methods.  
    
  static double ceil(double a)

static double floor(double a)

See explanation and example at:

|  |  |
| --- | --- |
|  |  |

[**http://www.tutorialspoint.com/java/lang/math\_ceil.htm**](http://www.tutorialspoint.com/java/lang/math_ceil.htm)

**Gallons or gallons and quarts:**

* Depending on the type of paint, the store sometimes only has gallons for available and sometimes has both gallons and quarts available. Determine the amount of paint to be purchased in each situation.

**For example**, if you are painting a room has an area of 340 square feet:

If only gallons are available, you would need 2 gallons.  
If gallons and quarts are available, you would need 1 gallon 1 quart

**Displaying results:**

* If more than 1 gallon is needed display “gallons” next to the number of gallons.
* If only 1 gallon is needed, display “gallon”.
* For quarts, do the same (choose quart or quarts based on the number needed)
* If there are no quarts needed, do not display “0 quarts”. (See example 2.)

For example: 1 gallon, 4 gallons, 2 gallons and 1 quart

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**Sample run #1:**

Enter the room dimensions below:

Length? 10

Width? 20

Height? 8

How many doors does the room have? 1

How many windows does the room have? 2

Total square feet: 435 square feet

Paint to purchase:

If gallons only: 2 gallons

If quarts are available: 1 gallon and 2 quarts

**Sample run #2:**

Enter the room dimensions below:

Length? 10

Width? 5

Height? 10

How many doors does the room have? 0

How many windows does the room have? 0

Total square feet: 300 square feet

Paint to purchase:

If gallons only: 1 gallon

If quarts are available: 1 gallon