Programming Project 3
(100 Points)

Name: _____
10/30/2015

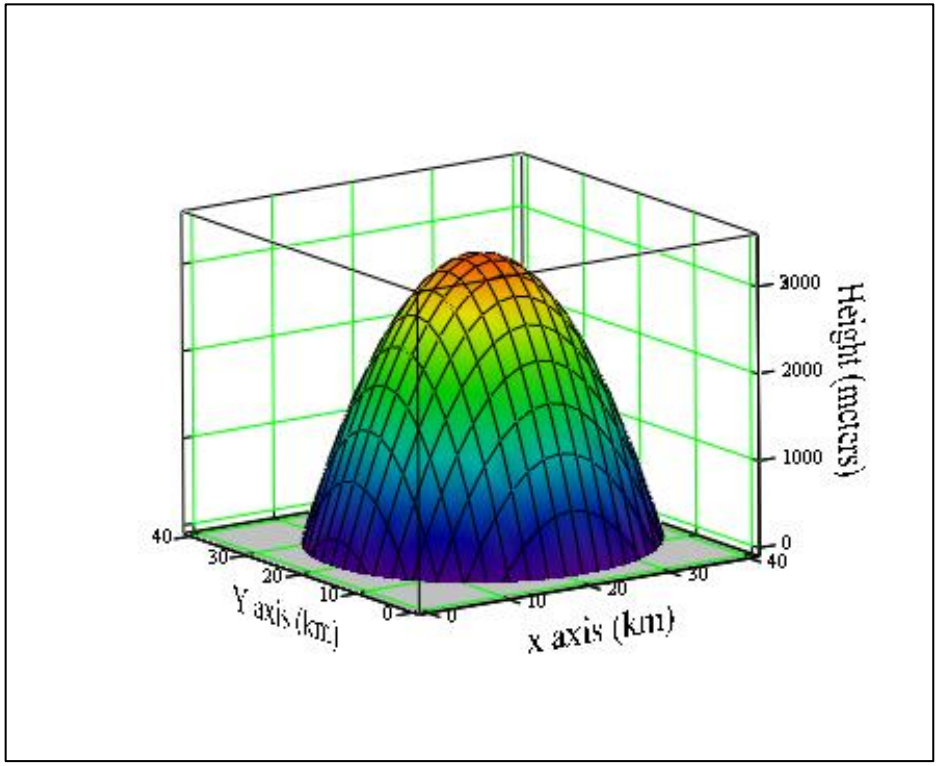
The height (in meters) of large mountain on Mars can be accurately predicted by the function h(x,y) where x is the east-west direction (in km) while y is the north-south direction (in km).

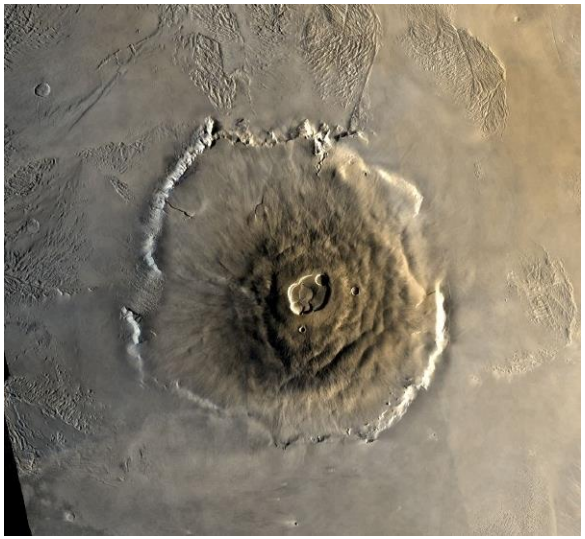
$$h(x,y) := -9.3\cdot x^2 + 372.0\cdot x + -10.2\cdot y^2 + 367.2\cdot y - 3724.8$$

Write the code for a java class (**named Volume**) which will approximate the mountain's volume (in $km^3$). Identify, study, develop, and utilize a numerical method (trapezoidal minimally but more advanced algorithms can be used) which permits a user to calculate the volume of a 3D shape. Ensure the class permits the user to input and modify necessary parameters (e.g., the number of iterations north-south and east-west directions) from the console via a tester class. Provide the output to the console. **Use Javadoc to provide documentation for the class in API format (Volume.html).**

Provide a MS Word document detailing your solution to this problem. Include all class's code, input/output, and documentation as appendices of this paper. Describe **in detail,** the numerical method used to calculate the volume and how your code implements this method. Include the Javadoc as an appendix.

Send the Word document and Volume.html as email attachments to mheinen_1@msn.com NLT midnight 11-20-13.



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