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Geometric Patterns & Contour Plots (Series 1)

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Abstract
In this article, I studied the contour plot of some functions. Here I used Wolfram alpha for computing contour plots for these functions. Finally, I have posed some nice Geometric patterns or designs for interior or exterior wall decorations.

Key Words *Contour Plot, Geometric Pattern*

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I. Introduction

Geometry is the field of mathematics that studies the figures and underlying spaces. Contour plot is a plot of equipotential curves. As per desired the region between contours can be shaded and colored to indicate their magnitude. It is a plane section of the 3- D graph of the two variable functions $f(x,y)$. That is, it is a plane structure. Sometimes, it is known as a topographic map [1], [2], [3], and [4]. In this proposed work we have created some nice designs and patterns by using cropping, gluing, and some other geometrical features of plane figures.

Contour Plot of $\boldsymbol{sin(7x^3y+1)cos(7y^3\,x+3)}$ *Figure- 1 represented the contour plot of the function defined as* $in(7x^3y+1)cos(7y^3\,x+3), x, y \in R$ *; computed by the help of Wolfram Alpha.*

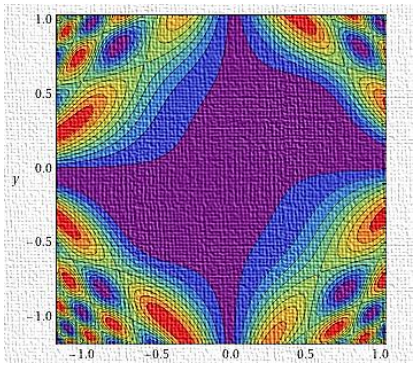

Figure- 1

Design via Contour Plot of $\boldsymbol{sin(7x^3y+1)cos(7y^3\,x+3)}$***-*** *Here we proposed some beautiful pattern / designs via contour plot by using cropping, gluing, some artistic modelling features.*

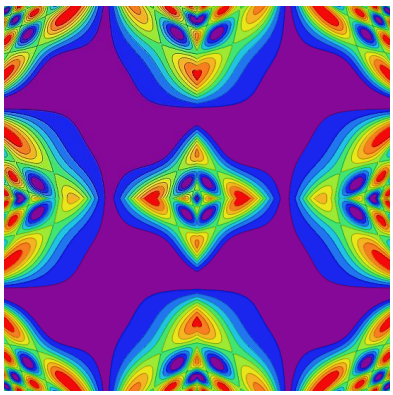

Figure- 1.1 (Multi color pattern)

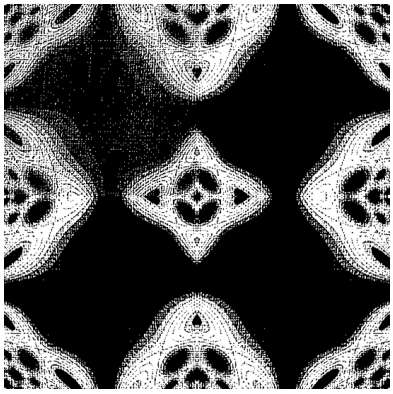

Figure- 1.2 (Black gray color pattern)

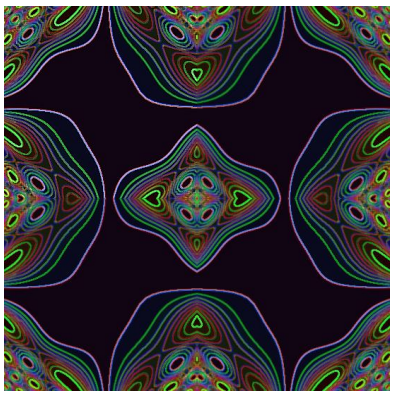

Figure- 1.3 (2-Multi color pattern)

Contour Plot of $\boldsymbol{sin(17x^3y + 1)cos(17y^3\,x + 3)}$ *Figure 2 represented the contour plot of the function defined as* $sin(17x^3y + 1)cos(17y^3\,x + 3), x, y \in R$ *; computed by the help of Wolfram Alpha.*

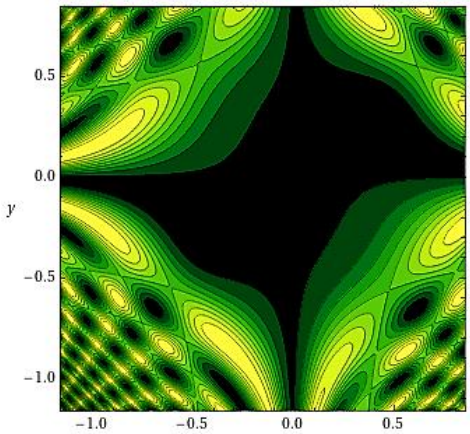

Figure- 2

Design via Contour Plot of $\boldsymbol{\sin(17x^3y + 1)\cos(17y^3 x + 3)}$***-*** *Here we proposed some beautiful pattern / designs via contour plot by using cropping, gluing, some artistic modelling features.*

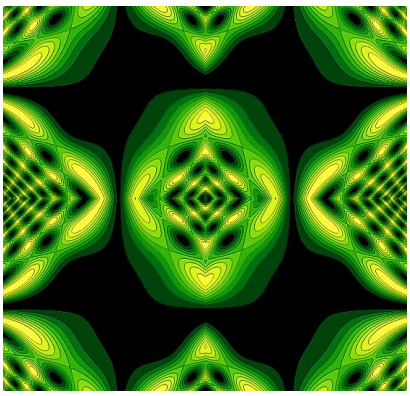

Figure- 2.1 (Green Yellow color pattern)

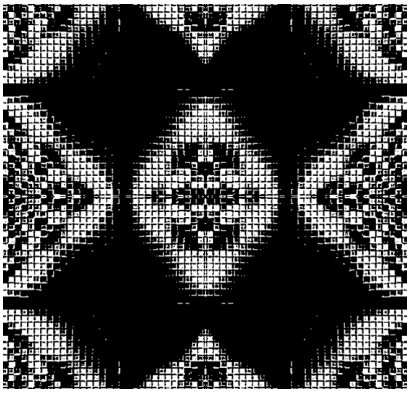

Figure- 2.2 (Black gray color pattern)

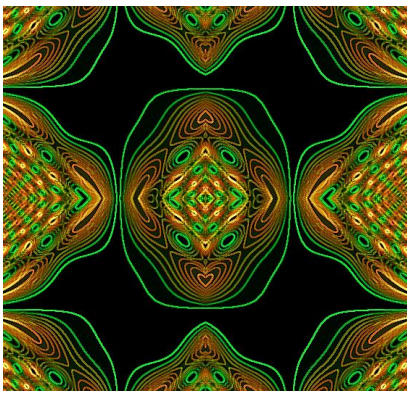

Figure- 2.3 (Multi color pattern)

Contour Plot of $\boldsymbol{\ln|sin(7x^3y\ +1)cos(7y^3\ x\ +3)|}$ *Figure- 3 represented the contour plot of the function defined as* $\mathrm{n}|sin(7x^3y\ +1)cos(7\mathrm{y}^3\ \mathrm{x}\ +3)|, \mathrm{x}, \mathrm{y} \in \mathrm{R}$ *; computed by the help of Wolfram Alpha.*

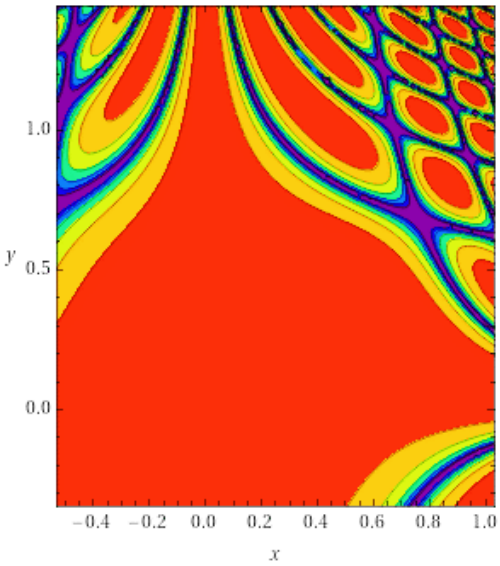

Figure- 3

Design via Contour Plot of $\boldsymbol{\ln|sin(7x^3y\ +1)cos(7y^3\ x\ +3)|}$***-*** *Here we proposed some beautiful pattern / designs via contour plot by using cropping, gluing, some artistic modelling features.*

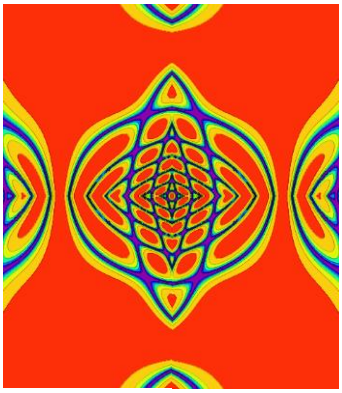

Figure- 3.1 (Multi color pattern)

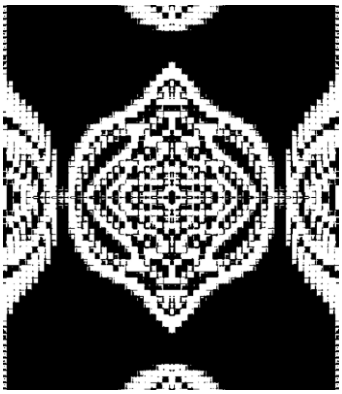

Figure- 3.2 (Multi color pattern)

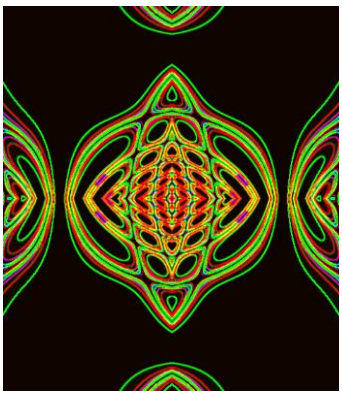

Figure- 3.3 (Multi color pattern)

Contour Plot of $\mathbf{ln}|\boldsymbol{sin}(\mathbf{17}\boldsymbol{x}^{\mathbf{3}}\boldsymbol{y}\ +\mathbf{1})\boldsymbol{cos}(\mathbf{17y^3\ x}\ +\mathbf{3})|$ *Figure- 4 represented the contour plot of the function defined as* $\mathrm{n}|sin(17x^3y\ +1)cos(17\mathrm{y}^3\ \mathrm{x}\ +3)|, \mathrm{x}, \mathrm{y} \in \mathrm{R}$ *; computed by the help of Wolfram Alpha.*

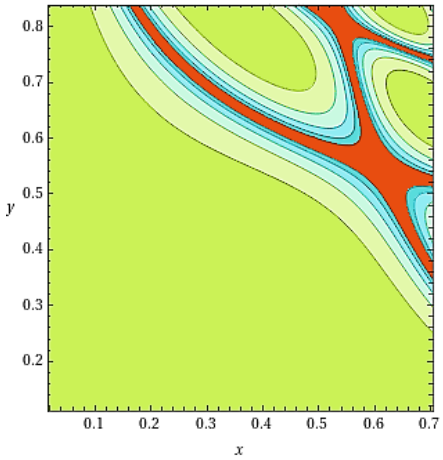

Figure- 4

Design via Contour Plot of $\boldsymbol{ln}|\boldsymbol{sin}(\mathbf{17}\boldsymbol{x}^{\mathbf{3}}\boldsymbol{y}\ +\mathbf{1})\boldsymbol{cos}(\mathbf{17y^3\ x}\ +\mathbf{3})|$**-** *Here we proposed some beautiful pattern / designs via contour plot by using cropping, gluing, some artistic modelling features.*

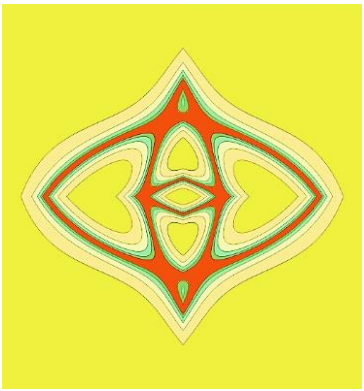

Figure- 4.1 (multi color pattern)

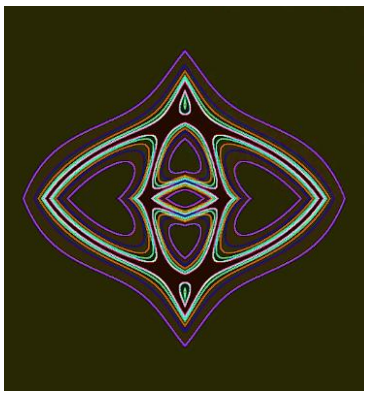

Figure- 4.2 (Black purple, green color pattern)

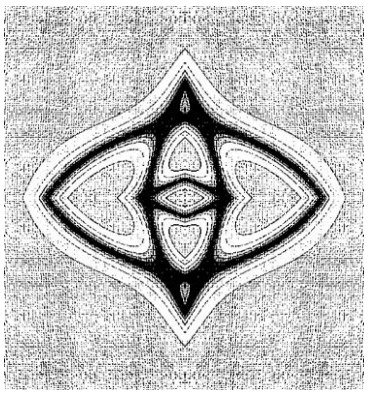

Figure- 4.3 (Black gray color pattern)

Contour Plot of $\boldsymbol{sin(707x^3y\ +1)cos(707y^3\ x\ +1)}$ *Figure- 5 represented the contour plot of the function defined as* $in(707x^3y\ +1)cos(707y^3\ x\ +1), x, y \in R$ *; computed by the help of Wolfram Alpha.*

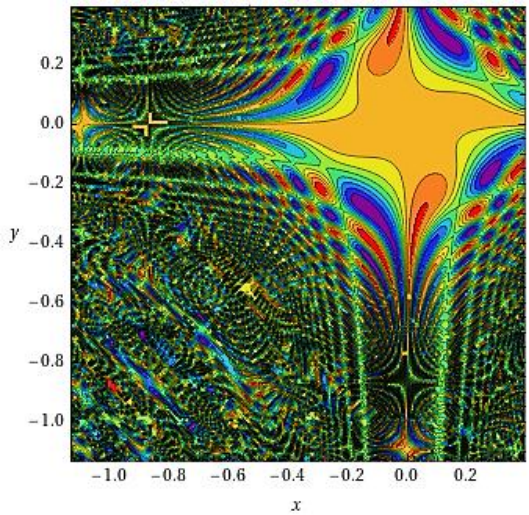

Figure- 5

Design via Contour Plot of $\boldsymbol{sin(707x^3y\ +1)cos(707y^3\ x\ +1)}$***- Here we proposed some beautiful pattern / designs via contour plot by using cropping, gluing, some artistic modelling features.***

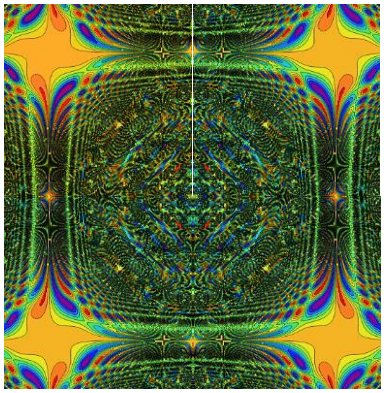

Figure- 5.1

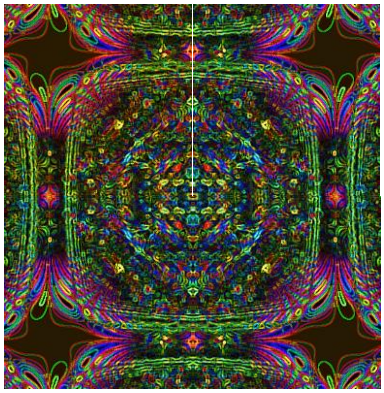

Figure- 5.2

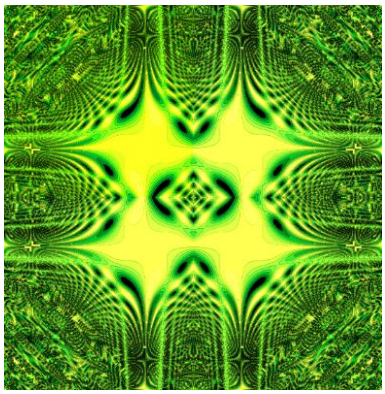

Figure- 5.3

Contour Plot of $\mathbf{1/(sin(x^3y + 1)cos(y^3 x + 1))}$ *Figure- 6 represented the contour plot of the function defined as* $1/(sin(x^3y + 1)cos(y^3 x + 1))$, $x, y \in R$ *; computed by the help of Wolfram Alpha.*

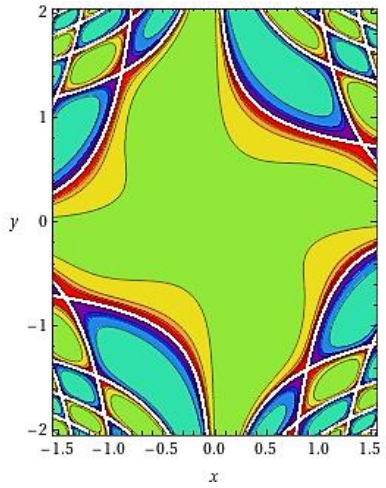

Figure- 6

Design via Contour Plot of $\mathbf{1/(sin(x^3y + 1)cos(y^3 x + 1))}$**-** *Here we proposed some beautiful pattern / designs via contour plot by using cropping, gluing, some artistic modelling features.*

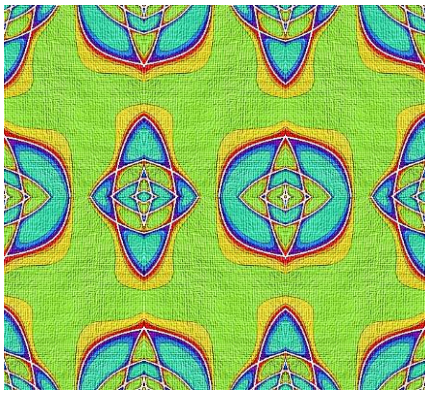

Figure- 6.1 (Multi color pattern)

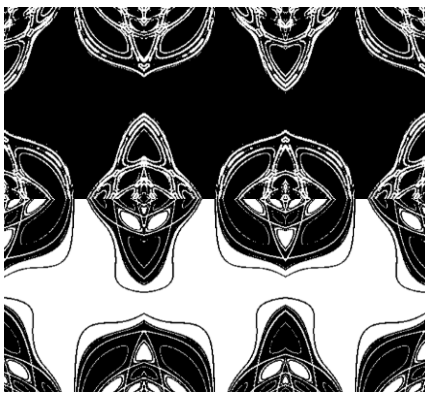

Figure- 6.2 (Black gray, white pattern)

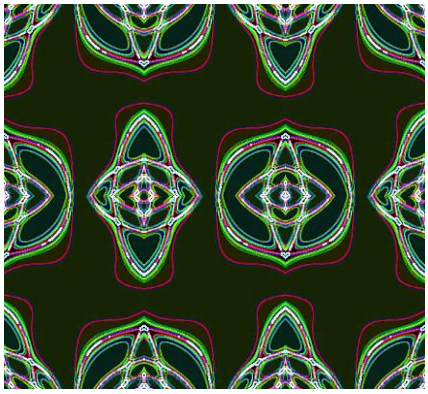

Figure- 6.3 (2- multi color pattern)

References

[1]. Courant, & Et Al, 1996. What Is Mathematics? An Elementary Approach To Ideas And Methods. New York: Oxford University Press. P. 344.
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