MT 2800 – Multivariable Calculus
Worksheet 12.2/12.3 – *Graph Matching*

Name: _____

Purpose: To gain experience with identifying mathematical formulas for functions with their graphs.

Procedure: Work together in groups to complete this worksheet.

1. Match the following implicit linear equations in 3D with their graphs (planes in 3D).

_____ $3x-5y+z=2$

_____ $3x+5y-z=-2$

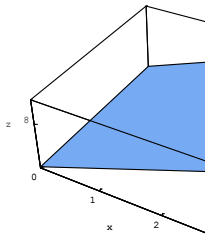
_____ $3x-5y-z=-2$

_____ $3x-z=-2$

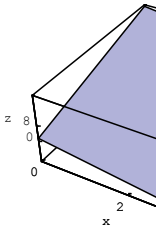
_____ $5y+z=2$

_____ $z-3=2$

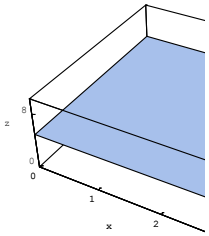
A.



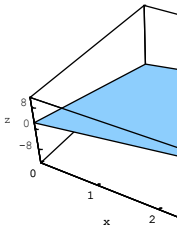
B.



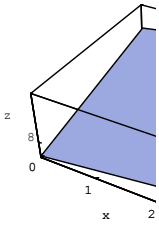
C.



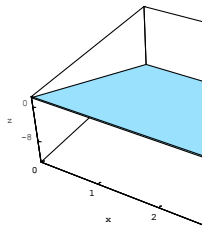
D.



E.



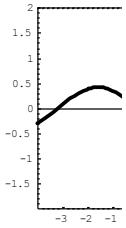
F.

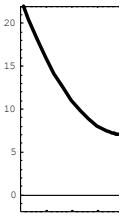


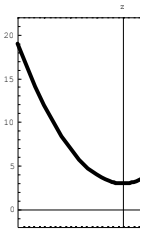
2. Match each of the following equations describing 3D surfaces with the appropriate vertical slice (intersection of surface with the vertical plane $y = 2$), A-E, in the first column AND with the appropriate contour plot, F-J, in the second column.

Matching Vertical Slice (Choose A-E)	**Matching Contour Plot (Choose F-J)**	**Equation of Surface**
		$f(x, y) = x^2 + y^2 + 3$
		$f(x, y) = x^2 + 3$
		$f(x, y) = y^2 + 3$
		$f(x, y) = (\sin x)(\cos y)$
		$f(x, y) = \sin(x) + y$

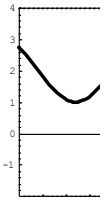
A. B. C.

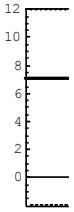




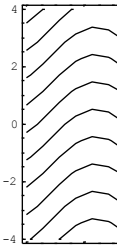


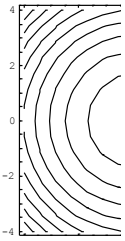
D. E.





F. G. H.





I. J.