National University of Sciences & Technology
School of Electrical Engineering and Computer Science
Department of Basic Sciences

MATH-243: Vector Calculus (3+0): BEE-2k20-C Fall 2021

Quiz 1: Cylinders and Quadric Surfaces	
Maximum Marks: $4 \times 2.5 = 10$	Instructor: Dr. Naila Amir
Date: $28 - 09 - 2021$	Duration: 10 Minutes
Name: Master Solution	CMS ID:

Question: Match each of the following equations with the graph of the surface it defines. Complete the following table by identifying each of the surface by type (ellipsoid, sphere etc.) and clearly mentioning the axis of the surface.

Equation	Type of surface	Axis of surface	Label of graph of surface
$9y^2 - 4x^2 - 9z^2 = 0.$	Elliptic cone	y-axis	IV
$4 - 4y^2 - z^2 - x = 0.$	Elliptic Paraboloid	x-axis	III
$x^2 - 4y^2 = 1.$	Hyperbolic Cylinder	z-axis	II
$\frac{y^2}{4} - \frac{x^2}{4} + \frac{z^2}{9} - 1 = 0.$	Hyperboloid of one Sheet	x-axis	VI