

Name: ANSWERS

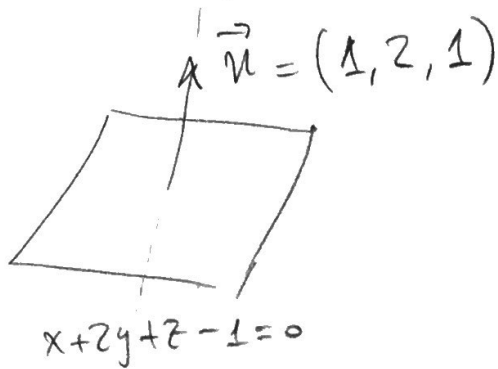
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MAT 226 (Spring 2020)

Quiz 1

1. (5 pts) Write the parametric equations of the line in \mathbb{R}^3 that is orthogonal to the plane $x + 2y + z - 1 = 0$ and passes through the point $(0, 1, 1)$.



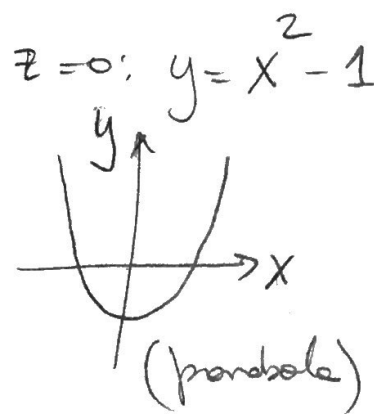
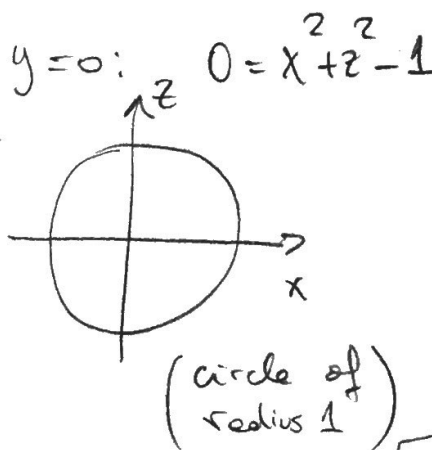
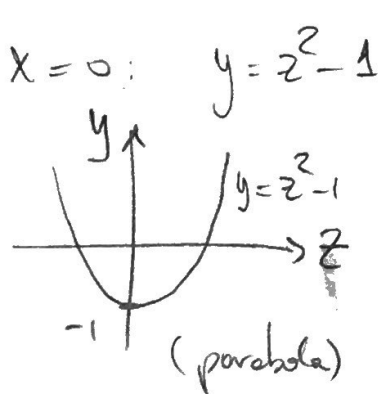
Line orthogonal to this plane through $(0, 1, 1)$ is:

$$\vec{r}(t) = (0, 1, 1) + t(1, 2, 1)$$

$$\begin{cases} x = t \\ y = 1 + 2t \\ z = 1 + t \end{cases}$$

2. (5 pts) Use at least 3 cross-sections to determine the type of the quadric $x^2 - y + z^2 = 1$.

$$y = x^2 + z^2 - 1$$



Therefore, $y = x^2 + z^2 - 1$ is a paraboloid.

