Name: ID #: Section #:

(**1**) Consider the line $L:\ x = 2+t,\ y = 1-t,\ z = 3+\frac{1}{2}t$ and the plane $P:\ 2x+y-2z = 4$.

(**a**) [2pts] Show that the line L and the plane P are parallel.

(**b**) [2pts] Find the distance from the line L to the plane P.

(**2**) [3pts] Find an equation of the plane through the points $A(-1, 1, 1), B(-2, 0, 2)$ and $C(0, -1, 2)$.

(**3**) [3pts] Identify and sketch the surface $x = 2 - 4y^2 - z^2$.

Name: ID #: Section #:

(**1**) [3pts] Identify and sketch the surface $y = 1 - x^2 - 4z^2$.

(**2**) [3pts] Find an equation of the plane through the points $A(-2, 0, 2), B(1, -1, 2)$ and $C(-1, 1, 0)$.

(**3**) Consider the line $L:\ x = 1-t,\ y = 1+\frac{1}{2}t,\ z = 2+t$ and the plane $P:\ x-2y+2z = 4$.

(**a**) [2pts] Show that the line L and the plane P are parallel.

(**b**) [2pts] Find the distance from the line L to the plane P.