Question 4 **(7 marks)**

Consider the equations for three planes, each written in Cartesian form:

$\Pi_1 \quad x + y + z = 4$
$\Pi_2 \quad x - y - z = 7$
$\Pi_3 \quad y + z = 1$

(a) Explain whether or not any of these planes are parallel. (2 marks)

(b) Solve the given system of simultaneous equations. (3 marks)

(c) Give the geometric interpretation of the solution for this system of equations. (2 marks)