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Show all work. 5 points each.

1. Find the equation of the line through the points  $(2, -1, 4)$  and  $(4, 6, 1)$ . Is the point  $(0, -8, 7)$  on the line? Explain how you know.

2. Find the equation of the plane through the points  $(0, 1, 1)$ ,  $(1, 0, 1)$  and  $(1, 1, 0)$