

Show all work. 5 points each.

1) Find the symmetric equations of the line through the points $(0, \frac{1}{2}, 1)$ and $(2, 1, -3)$.

2) Find the equation of the plane that passes through the point $(1, -2, 1)$ and contains the line $x = 1 + t$, $y = t$, and $z = 1 - t$. Hint: Find three points on the plane.