

Show all work. 5 points each.

1) Find an equation of the plane that passes through the point $(1, 0, -2)$ and contains the line $x = 1 - 2t$, $y = 1 + t$ and $z = 4t$.

2) Sketch the curve with vector equation $\mathbf{r}(t) = \langle 1 + t, \sqrt{t} \rangle$ and indicate the with an arrow the direction in which t increases.