

Show all work. 5 points each.

1. Find the equation of the plane through the points  $(0, 0, 0)$ ,  $(8, 2, 4)$  and  $(-1, -2, -3)$ .

2. Find the equation of the tangent line to the curve with parametric equations  $x = t$ ,  $y = e^{-t}$ ,  $z = 2t - t^2$  at the point  $(0, 1, 0)$ . Hint: this point corresponds to  $t = 0$