MATH 261 Quiz 3 Name: .
Student number:

Show all work. 5 points each.

1. Find the equation of the normal plane for the curve $x = 2\sin(3t)$, y=t, $z = 2\cos(3t)$ at the point $(0, \pi, -2)$.

2. Find the velocity, acceleration and the speed of the particle with position function $\mathbf{r}(t) = \langle \frac{-t^2}{2}, t \rangle$. Sketch the path of the particle and draw the velocity vector for $t = 2$.