MATH 261 Quiz 3 Name: .
Student number:

Show all work. 5 points each.

1. Sketch the curve of $\mathbf{r}(t) = \langle e^t, e^{-t} \rangle$ for $0 \leq t \leq 1$. Then find $\mathbf{r}'(t)$ and sketch the vector $\mathbf{r}'(0)$

2. Find the equation of the tangent line to the curve $x = 1 + 2\sqrt{t}$, $y = t^3 - t$ and $z = t^3 + t$ at $t = 1$.