1. The tangential component of acceleration of an object with position $r(t) = e^t \imath + e^{-t} \jmath + \sqrt{2}\,t$ is $a_T(t) = e^t - e^{-t}$. Determine the normal component of acceleration, $a_N(t)$.

2. Find the equation of the line tangent to the curve

$$r(t) = \cos(t)\imath - \sin(t)\jmath + 2t$$

at the point $(-1, 0, 2\pi)$.