1. ( 10 pts ) Find the derivative of $y=x^{3}-e^{x}$ and the equation of the tangent line to the curve at $(0,-1)$.
2. ( 10 pts ) The equation of motion of a particle is $s=t^{2}-3 t$, where $s$ is in meters and $t$ is in seconds. Find
a. the velocity and acceleration as functions of $t$,
b. the acceleration after 2 seconds, and
c. the acceleration when the velocity is 0 .
