1. ( 5 pts ) Use natural logarithms to solve the equation and simplify your answer.

$$
e^{5-x}=\frac{e^{2}}{10^{3}}
$$

2. (10 pts) Evaluate the following limits.

$$
\text { a. } \lim _{x \rightarrow 1}\left(2 x^{2}-3\right)(x+1)^{3} \quad \text { b. } \lim _{x \rightarrow 1} \frac{\sqrt{x}-1}{x-1}
$$

3. (5 pts) The position, in meters, of an object is given by the equation $f(t)=1-t^{2}$, where $t$ is measured in seconds. Find the velocity and the speed of the object after 2 seconds.
