## Remember to show all of your work.

Problem 1. Find the derivative of $y=(\tan x)^{\left(e^{x}\right)}$ (Solve for $y^{\prime}$, but no need to simplify).

Problem 2. A particle is moving on a line with position given by

$$
s(t)=\frac{1}{3} t^{3}-2 t^{2}-5 t+1
$$

Find the values of $t$ where

- the particle is standing still
- the particle is moving forward
- the particle is moving backward

