

Worksheet 9

10/28/2022

1. The position of a particle is given by the equation $s = f(t) = t^3 - 6t^2 + 9t$ where t is measured in seconds and s in meters. Find the speed at time t . What is the velocity after 2 s? 4 s? When is the particle at rest?

2. Differentiate $y = x^2 \sin x$.

3. Differentiate $\tan x$. Hint: write $\tan x = \frac{\sin x}{\cos x}$ and use the quotient rule.

4. Differentiate $f(x) = \frac{x \sin x}{1+x}$.