

6<sup>th</sup> edition

Hint 3.4

Given a graph you must calculate the slope at that point.

For  $m = \frac{m_0}{\sqrt{1-(v^2/c^2)}}$  rewrite it so that you can see the function and coefficients

$$m = m_0 \left(1 - \frac{1}{c^2} v^2\right)^{-\frac{1}{2}} \quad \text{now find the derivative.}$$

#82  $V(x) = x^2 + 3x - 2$   $V$  is a function with respect to  $x$ . And  $V$  is velocity.

Acceleration is a function with respect to time

$$\text{Acceleration} = \frac{dV}{dt} = \frac{dV}{dx} * \frac{dx}{dt}$$

And what was given is  $\frac{dx}{dt}$  is the velocity  $V(x)$

So acceleration is  $\frac{dV}{dx} * V(x)$