Practice worksheet | Introduction to calculus

Displacement, velocity and acceleration models

Name: _____ Date: _____

6 questions | 23 marks

1. For $s(t) = 3t^2 + 2t$ metres, find v, a and $v(2)$. [3 marks]

2. For $s(t) = t^2 - 4t$ metres, with t in seconds and $0 \leq t \leq 5$, find the rest time and total distance. [5 marks]

3. For $s(t) = t^3 - 6t^2 + 9t$ metres, with t in seconds and $0 \leq t \leq 4$, find rest times, displacement and total distance. [6 marks]

4. Velocity is -7m/s. State the speed and direction. [2 marks]

5. For $s(t) = t^2$, can velocity be zero while acceleration is nonzero? [3 marks]

6. For $s(t) = 10 - 2t$, find displacement from 1s to 4s and total distance. [4 marks]