

MA161 Quiz 9

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Problem 9.1. The equation for the motion of a particle is

$$s(t) = t^3 - 27t.$$

- (a) Find the velocity and acceleration of s as a function of t .
- (b) Find the velocity at $t = 3$.
- (c) Find the acceleration when the velocity is 0.

Problem 9.2. Differentiate the functions

- (a) $y = 6e^x + 8\sqrt[3]{x}$.
- (b) $u = \sqrt[5]{t} + 6\sqrt{t^5}$.

Problem 9.3. Find an equation of the tangent line to the curve $y = x\sqrt{x}$ parallel to the line $y = 9 + 3x$.