

Name: \_\_\_\_\_  
Student ID: \_\_\_\_\_

## Quiz 6

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

**Question 1.** §24.4 #31 (5 marks) One statement of Boyle's law is that the pressure of a gas varies inversely as the volume for constant temperature. If a certain gas occupies  $650 \text{ cm}^3$  when the pressure is  $230 \text{ kPa}$  and the volume is increasing at the rate of  $20.0 \text{ cm}^3/\text{min}$ , how fast is the pressure changing when the volume is  $810 \text{ cm}^3$ ?

**Question 2.** §24.5 #31 (5 marks) Sketch the graphs of the given functions by determining the appropriate information and points from the first and second derivatives.

$$y = x^5 - 5x$$