

First Name: _____ Last Name: _____

Student-No: _____ Section: _____

Very short answer questions1. 2 marks Each part is worth 1 mark. Please write your answers in the boxes.(a) Find the domain of continuity for the function $f(x) = \log(4x^2 - 1)$.Answer: (b) Compute $\lim_{t \rightarrow 1} \sqrt{5t^3 + 4}$.Answer: **Short answer questions — you must show your work**2. 4 marks Each part is worth 2 marks.(a) Compute the limit $\lim_{x \rightarrow -3} \frac{x^2 - 9}{x + 3}$ (b) Find all values of c such that the following function is continuous:

$$f(x) = \begin{cases} x^2 + c & \text{if } x < c \\ 2cx - 2 & \text{if } x \geq c \end{cases}$$

Long answer question — you must show your work

3. 4 marks Compute the limit $\lim_{x \rightarrow 1} \frac{\sqrt{x+2} - \sqrt{4-x}}{x-1}$.