

Name: _____ Student Number: _____

Department: _____ Signature: _____

Q1.(2pts) State whether the following statement is **True** or **False**. If it is **False**, write **F** and provide a counter-example. If it is **True**, write **T** and you don't need to prove it.

- If f is continuous at everywhere on $(-\infty, \infty)$, then it is differentiable at everywhere on $(-\infty, \infty)$.

Q2.(8pts) Evaluate the limit

$$\lim_{x \rightarrow 1} \frac{2x^4 - \sqrt{4x}}{\sqrt{4x} - 2}.$$

[Do not use L'Hospital's Rule. Show your work neatly.]