



Quiz 3 (8 a.m.)
MAC3309 Mathematical Analysis

Topic	Continuity & the Mean Value Theorem (MVT)	Score	10 marks
Time	30 minutes (11 th Week)	Semester	2/2023
Teacher	Assistant Professor Thanatyod Jampawai, Ph.D. Division of Mathematics, Faculty of Education,	Suan Sunandha Rajabhat University	

Name **ID** **Sec**

1. **(5 marks)** Let $f(x) = (x - 1)(x - 2)(x - 3)$. Use the Definition to prove that

f is continuous at 2.

2. **(5 marks)** Use the Mean Value Theorem (MVT) to prove that

$$\ln x \leq x - 1 \quad \text{for all } x \geq 1.$$

Hints : Let $a > 1$ and consider a defined function on $[1, a]$.



Quiz 3 (1 p.m.)
MAC3309 Mathematical Analysis

Topic	Continuity & the Mean Value Theorem (MVT)	Score	10 marks
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Teacher	Assistant Professor Thanatyod Jampawai, Ph.D. Division of Mathematics, Faculty of Education,	Suan Sunandha Rajabhat University	

Name **ID** **Sec**

1. **(5 marks)** Let $f(x) = (x - 1)(x - 2)(x - 3)$. Use the Definition to prove that

f is continuous at 3.

2. **(5 marks)** Use the Mean Value Theorem (MVT) to prove that

$$\ln x < x \quad \text{for all } x \geq 1.$$

Hints : Let $a > 1$ and consider a defined function on $[1, a]$.