

**BREAKDOWN OF CALCULUS AB TEST 2-2**  
**100 PTS NON-CALCULATOR**  
**THURSDAY, NOVEMBER 1**

**Review:** Page 238: 41-47 odd, 77-81 odd, WKST on Particle Motion, Given Notes and examples

**Part I: Short Answer [50 pts × 1]** **Total Amount** **Total Points**

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§3.4A: Second Derivative Test and Concavity 5 questions 20 points

- Identify the concavity intervals, POI, and Relative Max and Relative Min using 2<sup>nd</sup> Derivative Test

Examples: Page 238: 41-45 odd, Revisit Notes on PPT and worksheets on FRQs and Justifications

§3.6:  $f$ ,  $f'$ , and  $f''$  graphs 4 questions 15 points

- Given a  $f'$  graph, identify the derivative, relative extrema, concavity, and sketch the  $f$  graph

Examples: Page 238: 47, Revisit Notes on PPT and worksheets of  $f$ ,  $f'$ , and  $f''$  graph

§3.6A: Particle Motion 3 questions 15 points

- Identifying a position equation and finding out of the velocity, its particle movement, particle at rest, acceleration, particle speeding/slowing down and when its velocity of particle is at zero

Examples: Revisit PowerPoint Notes on Particle Motion and worksheet/worksheet key

**Part II: Multiple Choice [12 pts × 1.3889]** **Total Amount** **Total Points**

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§3.4A: Concavity and 2<sup>nd</sup> Derivative Test 1 question 3 points

§3.6:  $f$ ,  $f'$ , and  $f''$  graphs 1 question 3 points

§3.6A: Particle Motion 2 question 6 points

**Spiral Review [6 pts × 1.3889]** **Total Amount** **Total Points**

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Chapter 1: Evaluate a limit when  $x$  approaches infinity 1 question 2 points

Chapter 2: Rules of Derivatives given a table 1 question 2 points

Chapter 5: Natural Logarithm Derivatives 1 question 2 points

1)

$$\lim_{n \rightarrow \infty} \frac{4n^2}{n^2 + 10,000n} \text{ is}$$

- (A) 0      (B)  $\frac{1}{2,500}$       (C) 1      (D) 4

2)

$$\text{If } f(x) = \frac{x}{\tan x}, \text{ then } f'\left(\frac{\pi}{4}\right) =$$

- (A) 2      (B)  $\frac{1}{2}$       (C)  $1 + \frac{\pi}{2}$       (D)  $\frac{\pi}{2} - 1$       (E)  $1 - \frac{\pi}{2}$

3)

$$\text{If } f(x) = \ln(e^{2x}), \text{ then } f'(x) =$$

- (A) 1      (B) 2      (C)  $2x$       (D)  $e^{-2x}$

KEY: 1) D, 2) E, 3) B

**Part III: Free Response. [16 pts × 1.5625]**

	<b>Total Amount</b>	<b>Total Points</b>
§3.7A: Particle Motion	1 question	7 points
<ul style="list-style-type: none"><li>• Given a graph, identify when the particle is moving left and/or right</li><li>• Determine time intervals of a particle's position, velocity, and acceleration</li><li>• Determine a guaranteed time from a graph</li></ul>		
Examples: Revisit PowerPoint Notes on Particle Motion and worksheet/worksheet key		
§3.6: $f$ , $f'$ , and $f''$ graphs	1 question	9 points
<ul style="list-style-type: none"><li>• Given a table, identify the absolute and relative extrema, POI, and sketching the graph</li></ul>		