

The Writing Questions on the AP Calculus Exams

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Why worry about writing on the exam?

"Writing" points on
the operational
exams free-
response questions

Year	AB	BC
2007	9	9
2008	7	8
2009	7	3
2010	7	7
2011	7	6
2012	9	7
2013	9	7

Why worry about writing on the exam?

- Students should be able to communicate mathematics and explain solutions to problems both verbally and in written sentences.

– from the GOALS of the AP Calculus Program

Writing Prompts

- Justify your answer
- Explain your reasoning
- Why?
- Give a reason for your answer
- Explain the meaning of a definite integral in the context of the problem
- Explain the meaning of a derivative in the context of the problem

What to do? . . . the short answer

- Determine which theorem or definition applies
- State (show) that your problem meets the hypotheses of the theorem or definition – BE SPECIFIC!

Explain the meaning of . . . a derivative

Include three things in the context of the problem:

1. What the derivative gives (rate of change, velocity, slope, *etc.*)
2. Units
3. Discussion of the argument .

Explain the meaning of . . . a definite integral

Include three things in the context of the problem:

1. What the integral gives (amount, average value, change in position, *etc.*)
2. Units
3. What the limits of integration mean.

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Examples used in the presentation

Continuity:

2007 AB 6 (a) Continuity

Justify your answer

2003 AB 2 Increasing/decreasing, Speed

2013 AB 1/ BC 1 Candidates' Test

2013 AB4/BC4 Candidates' Test

2013 AB4/BC4 First Derivative Test

2002 BC 5 The Second Derivative Test

2013 AB3/BC3 the Mean Value Theorem

Explain your Reasoning

2013 AB4/ BC4 – Concavity and Increasing/Decreasing

Show the Work

14. 2013 BC5 – L'Hôpital's Rule

Explain the meaning of a definite integral

2013 AB3/ BC3

Explain the meaning of a derivative

2012 AB1/BC1

2007 AB3 Form B

Other Theorems: IVT, MVT

2007 AB3

2007 AB 6 Form B

Writing Analysis AB and BC Operational Exams 2008 – 2013

YEAR	Number	Prompt	Theorem
2007	AB2/BC2 b	GR	Inc/dec
	c	JYA	Candidates' Test
	AB3 a	Explain	IVT
	b	Explain	MVT
	AB4 a	JYA	Candidates' Test(left/right)
	AB5/BC5 a	GR	Approx > or <?
	c	Integral	Meaning in context
	d	GR	Approx > or <?
	AB6 b	JYA	2DT
	BC3 b	Derivative	Meaning in context (Polar)
	c	Derivative	Meaning in context (Polar)
	BC4 b	GR	Concavity
	d	Explain	Alternating series test
2007: AB = 9, BC = 9			
2008	AB2/BC2 c	GR	MVT and IVT
	AB3 b	JYA	1DT
	AB4/BC4 a	JYA	1DT
	b	EYR	IVT
	c	JYA	Speed
	d	JYA	Inc/dec
	AB6 b	JYA	1DT
	Bc3 b	EYR	Approx > or <?
	BC 5 a	JYA	1DT
	b	EYR	Inc/dec concavity
2008: AB=7, BC = 8			
2009	AB1/BC1 b	Integral	Meaning in context
	c	GR	1DT
	AB2/BC2 b	JYA	Candidates' test
	AB3 b	Integral	
	d	JYA	1DT
	AB6 a	JYA	POI (1DT)
c	JYA	1DT	
2009: AB = 7; BC = 3			

YEAR	Number	Prompt	Theorem
2010	AB2/BC2 b	Integral	Meaning in context
	D	JYA	Candidates' Test
	AB3/BC3 b	JYA	Inc/dec
	c	JYA	1DT
	AB5 b	EYR	1DT (POI)
	C	EYR	1DT
	AB6 b	EYR	Approx > or <?
	BC3 b	GR	Inc/dec (right/left)
	BC6 b	GR	2DT
	c	EYR	Approx > or <?
2010: AB = 7, BC = 7			
2011	AB1 a	GR	Speed
	AB2/BC2 b	Integral	Meaning in context
	c	Explain	Net Change from integral
	AB4/BC4 b	JYA	1DT
	c	GR	1DT (POI)
	d	Explain	MVT
	AB5/BC5 b	Explain	Approx > or <?
2011: AB = 7, BC = 6			
2012	AB1/BC1 a	Derivative	Meaning in context
	b	Integral	Meaning in context
	c	ER	Approx > or <?
	AB3/BC3 c	JYA	1DT
	d	ER	1DT(POI)
	AB4 c	Explain	Definition of continuity
	AB5/BC5 a	ER	Compare rates
	b	Explain	Compare graphs y''
AB6 c	ER	Speed	
2012: AB = 9, BC = 7			
2013	AB1/BC1 a	Derivative	Meaning in context
	d	JYA	Candidates' Test
	AB2 c	JYA	1DT (Change direction)
	d	GR	Speed
	AB3/BC3 b	JYA	MVT
	c	Integral	Meaning in context
	AB4/BC4 a	JYA	1DT
	b	JYA	Candidates' Test
c	EYR	Inc/dec & Concavity	
2013: AB = 9, BC = 7			

GR = Give a reason for your answer

JYA = Justify your answer

EYR = Explain your reasoning

Contact Information

The slides for this presentation and other similar presentations are at http://www.linmcmullin.net/AP_Calculus_NEW.html



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