AP AP Calculus AB Test Booklet

IVT

IVT is good to go

1. Let g be a continuous function on the closed interval [0,1]. Let g(0)=1 and g(1)=1. Which of the following is NOT necessarily true?

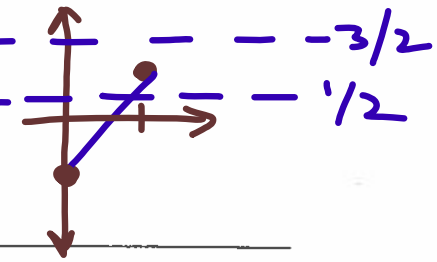
(A) There exists a number h in [0,1] such that $g(h) \geq g(x)$ for all x in [0,1]. extreme

(B) For all a and b in [0,1], if a=b, then g(a)=g(b)

(C) There exists a number h in [0,1] such that $g(h) = \frac{1}{2}$ true

(D) There exists a number h in [0,1] such that $g(h) = \frac{3}{2}$ Not nec. true

(E) For all h in the open interval (0,1), $\lim_{x \to h} g(x) = g(h)$



2.

x	0	1	2
$f(x)$	1	k	2

IVT

The function f is continuous on the closed interval [0,2] and has values that are given in the table above. The equation $f(x) = \frac{1}{2}$ must have at least two solutions in the interval [0,2] if k=

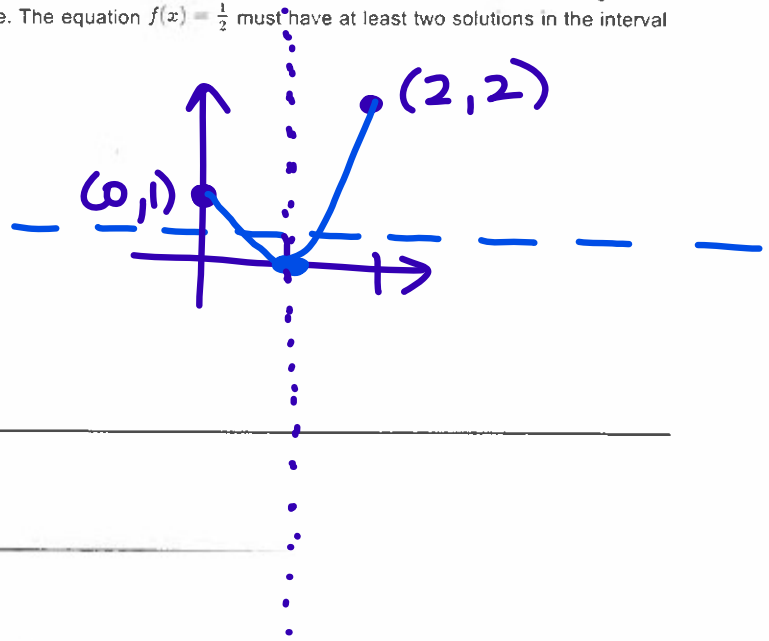
(A) 0

(B) $\frac{1}{2}$

(C) 1

(D) 2

(E) 3



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IVT

t (minutes)	0	2	5	8	12
$v_A(t)$ (meters/minute)	0	100	40	−120	−150

Train A runs back and forth on an east-west section of railroad track. Train A's velocity, measured in meters per minute, is given by a differentiable function $v_A(t)$, where time t is measured in minutes. Selected values for $v_A(t)$ are given in the table above.

3. Do the data in the table support the conclusion that train A's velocity is -100 meters per minute at some time t with 5 < t < 8 ? Give a reason for your answer.

by IVT

Please respond on separate paper, following directions from your teacher.

$V_A(5) = 40$ since $-120 < -100 < 40$

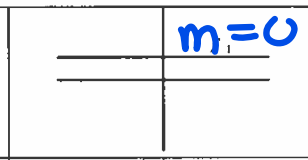
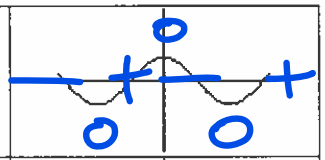
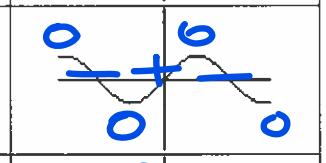
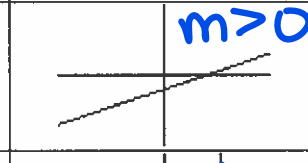
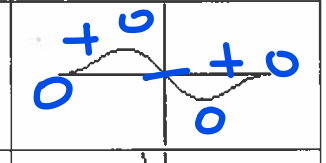
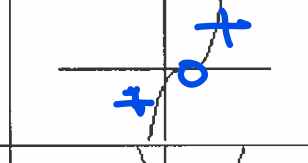
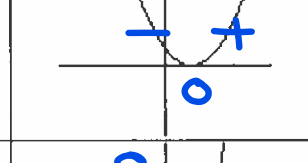
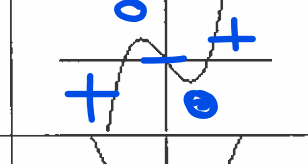
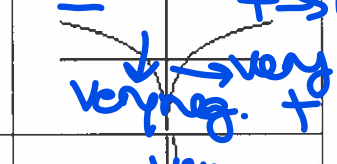
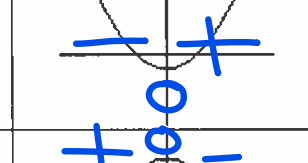
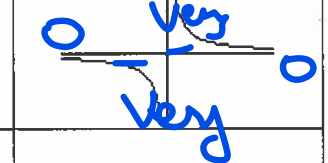
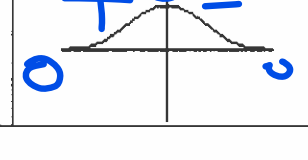
$V_A(8) = -120$ $V_A(t) = -100$ at some $5 < t < 8$

AP Calculus *NONE is an option

Match the function graphs (f) with the graphs of their derivatives (d).

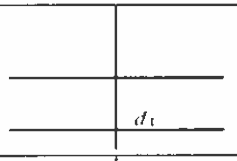
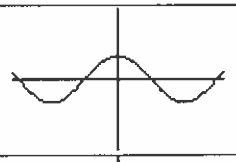
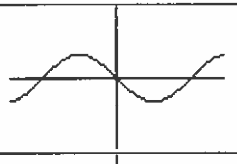
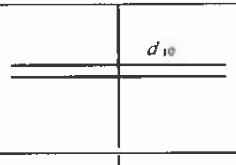
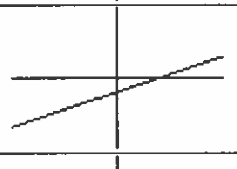
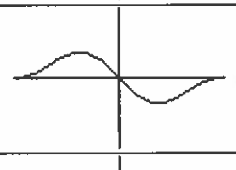
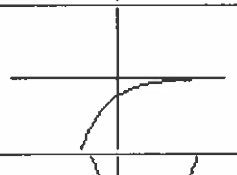
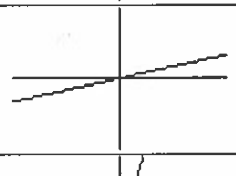
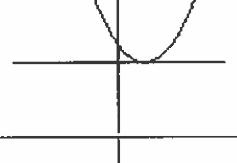
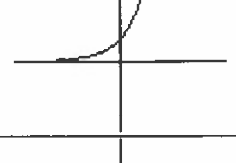
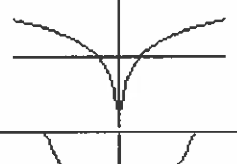
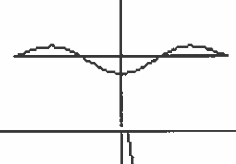
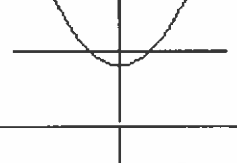
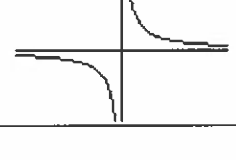
Name:_____

Period:_____

A		I	
B		J	
C		K	
D		L	
E		M	
F		N	
G		O	
H			

MATCHING:

A	8
B	1
C	10
D	5
E	3
F	7
G	12
H	11
I	2
J	9
K	14
L	4
M	13
N	15
O	None

1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
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