ASSIGNMENT 6 MATHS Date SAAD RIAZUDDIN MAHMOOD (22803) 12 ~ Las Q +) (a) decreasing EXERCISE SET 2.1 (b) mcreasing (c) increasing (d) decreasing Q1) (a) velocity = gradient 3/2 V= (30-0)/(w-25)=4 (b) 42 4 Qs) It is a straight line with its gradient 37 equal to the velocity. 77 FY A position Or) AT t=7 Q () FY V= gradient A v≈ (70-0)/(8-L) 4 V= 11.67 4-1 AT t= 8 V= gradient Till to, the velocity increases, so does the slope v≈ (140-0)/(10-4) since the gradiente of the position-time graph V= 23-33 is equal to gradient From to to to, the velocity deeverses s. the slope decreams At to, the velocity drops to 0 so the slope also 03) Cal O Transis in 1 house 1 4 (b) t=0,2,4,8 becomes 0 T (c) maximum o to/ XX minimum + t-3 (27) (a) i = gradrent Y v= (20-0)/1.545) 4-V=-6.67 45 4 4

1	ъще	33.3
0		
C	(025) car A) +=0 51.11111111111111111111111111111111111	(Q30) This is because to find the gradual
88	(b) gradrent = growth rate	of a posit ma curve me need a
P	= (200-75)/(1750)=7.14	tangeaut and to find the gradient of
D	(c) 14 years	this tangeant but we only have one
D	rate = (200-0)/117.5-2.5).1-12	point. The other point is taken to be
D J	vate = 13.3	arbitrary which tres in the igraph, the tree ine
10	rate = (12) + (12)	junning these two points is the secont line.
1		The tangeant at point. P is defined
7	Je 2-1-13 (AL) 3 - 148 - 1 (St) F.	to as the me that is formed when
A1	February 2 - 128 - 128) F.	this the arbitrary point comes very
	いけん チャムー チャム	close to pont P. (1)
₹	Orphy = (4.5(12) -4(0))/(12-6)	
* C-	V= 547 - (1111)](1)](1	(Q31) the instantaneous velocity at
\$	v = 54 + (1) (b) $f'(n) = 9 + (1)$ $f''(6) = 54$	t=1 is equal to the limit as
\$	(b) + (1/6) = 54 (ms) - (6 (ms))	h - 0 of the average velocity
9 9	V = 0 /	during the interval let uses t=1
,	1-42- 14475W	and += 1+10
6	(21) (a) v=(6(4)2-6(2)+)/(4-2)	N. Committee of the com
S	(6)81(4)=124+3	V.S
6	5'(2) - 24(2)3=192	
Va	v=1972 - chail - (al)	(a) D
6	73	A service of the serv
6	4.5/1.564)	7
i		
6	7-12-16-16	
1	of Little A lotte liet	

EXERCISE SET 2.3	(Q7) yzmnte
()(4) f'(1) = (5.5-2)/ (2-0.5) = 3.33	y=52+6 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
10 f(2) = Or his other trans	-125(3)+c = 1 to the contract = 0
f'(5) = (3+1)/(6-5) =-2	1 (2-16 1907 D) (5) OF
f'(6) = (3-0)/(-7+4)=1	+ 13 y=5n-)605 - 3011 (6 a) = 1
my we silver of the house	1. 2.51 - par 5
Q2) f'(4) < f'(6) < f'(2) < 0 < f(3)	
Reserved at post P is defined	h larger h
Oz) (a) f' (a) will be the slope of the Ine	= 2(h+h)2 = 2n2 = 2(21+6202ml)-2n2
(b) f'(2) = 3 have perioded at 4 per	
(c) f'(2)=3 (1 /2110) of	= h'+ 7nh = 7n+h = 4n
	1 (10 - 5) of 1014 (11) 2 (12 - 6) 4
Q4) f'(1)=(-1-2),=113 1711 11	Q10)f(n)=f(n+h)-f(n)
20 / incl (-(-)) of 2 10 10 11	A some
Q5) 1 1 1 2 0	
- The integral to large to = 1	h \(\sigma \int \frac{1}{2} \text{Conth) +1 = \(\sigma \int \frac{1}{2} \text{Conth}}\)
1.	= 2n+2h+1 -2n-1 = 2
-1	h (JONG FIF JZn 21) JZ(N/)+1 + JZn+1
	27 = 1 2 = 1 7
	2N2m+1 52m+1 V1 3
AT	10 (= 141 142 - (8) 3 36
O6)	OB) Flas flash) + flas
1	<i>Y</i>
	E, (1M2 / 1/2 /)
	b
	f'/か= n-n-h=-h hnlnth hn3+h2
	halathy hathing

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=- = - /n?	Qui) V'Iv) = v(rth)-v(r)	1)
nithn		by	
Q 20) f'(n) 2 f(n+h) - f(n)	V'(r) =	4/3 1 (14) 3 - 4/3 xx 3	
h		4	
\$ f'(n) = 1/244-1 - 1/24-1	N'(r) 3 9/3/	or(1744-174)(144)-4/3AV	3
4	(i) .	4	(1)
f'ly= . Vn-1 - Vn+6-1	シンシーチョ	+(+3++42+2+2+423+2+	42)-tm3
h~ (n-1)/n+h-1)	(5-3)	L	
f/n/2 n-1-n-h+1	V/4) = (90 +3	~40v3 + 2v3h +4h+2+943+2n	(2)
h (myn+4-1) (Vn-1+ Vn+4-1)	34		_
f'(n)= -h	U'(V) = 1 (8	822+42 = 12 ALZ	1.30
h((n-1) ~ nth-1" + (n+h-1) ~ m-1		3	
1/4) = -1	V1(r) = 4x	r ²	
(n-1) n-1 +(n-1) n-1	j - A 5 - A		
$f'(h) = -1$ $(2n-2)\sqrt{n-1}$	Q23) En D	(b) F (c) B	
	(d) c	(e) A (f) E	1.5
f'(h) = -1	187	↑ [¬] Y	
2(n-1)3/2 Qz1)f'(1)=fk4h)-f(1)	(l25)	1 2 63 6 6	
Q21) f/(1) = f (44)-f(1)	1	~ ~~	
0/11/2 1/2			
f'(+)2 4(+4)2-4t2		It was been it will	3.).
M. 417.21	7.00	7 V W W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
o f(H1 4+2+942+8+4.4+7	() z (g)	in the proof to at a	: 1
f'(+) = 44 + 8+	1	to the second plan is a	18
		52/3	1
● f(t) = 8t		200 200 200	75
		~	

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141	ነդ		•
(8)		(Q30) True: if a function 13	
	1 - In	distremente at a point, then has to	•
- Ja		be continuous too	
	Attack to the state of the stat		
(1)	7	$(031)(a) f(m) = \sqrt{2}, a = 1$	•
(d)	a bac a landay	(1) $f(x) = x^2, a = 3$ Q32(a) $f(n) = \cos n, a = \pi$	
) N	$(b) f(n) = n^{-1} a = 1$	•
Part of Section		Tarria de la companya	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
4	7	Q3) dy = (1-(214)2)-(1-1)2=(1-2-42224)-(7	-21)2
(e)	(= (- =3)	dn 4	A 1 .
	n n	2/-12-him- 22h 1-12+2n	
٧	* * *	h 1 ()	(A.)
)	= -2n -h 2-2(n) -0 =-2	
m) 3	y	Q34) dy = 2+2+4-2+2	-
(f)	(1)	(234) dy = -n+h 2	•
1) n	dy = 2/2+2+4)-(22)(ash)	
		da halashi	®
	V	dy 2 -2 = -2	***
Q27) False, if	tangeaut horizontal	de acoupt 22	
then f'		dy = -1	
Q 28) True, f'		dn 2	0
	the tangeart tree.		•
Ora) False, Inj	15 contrivous but	+2,	•
not differ	encille at n=0,	J s	•

9	
= 035) y=-2n+1	(1) f(120)= f(3)-f(2) = 2.2-2.39=-0.14-
	3-2- with I am there times -
9 /	(241) (a) dollars per Sect (\$/A) -
2 1	(1) f'(n) ≈ prize of extra foot -
to provide a boy thereof	- Elete. If + in idifficentials and color
	(c) If each extra toot added, moreases
2	the total prize, then f'(m is + ve) W f'(300) ≈ f(301) - f(300) = f(300) ≈ f(300) + 1000 -
with you to a continuous D	W f/300) x f(301) - f(300) = f(304) ≈ f(300) + 1000 -
2 (039) f(3)f(1) = 2.2-2.12	= f(300)2/600 301-306
7-1 2	So extra money for feet is \$1000 -
₹ 20.04	
f(z)-f(D= 2.34-2.h	Q42)(a) gallon ²
2-1 1	
20,22	(b) Increasing this amount of paint would
f(21-1(0) = 2.34-0.58.	Le sold for one more dalla for ceach
28	gallon
20.88	(c) negative " increase in the amount of panil
(6) fangeaut slope = 08	leads to ideriuse in the camount sold
f(2)-f(a) il best estimate	
7 -6	
of (3)-f(1) is worst estimate	
C 3-1	
(f (3)-f(1) ; 1 worst estimate 3-1 (Q90 Xa) f (0.5) = f(1)-f(6)	
1-0	
= 2.12-0.58 = 1.54	
= 2.12-0.58 = 1,5¢	

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	- they	
Q50) A function of it and to be Suffere	misto it lim	d est way
foint out such that.	0	2
(1/n.) be = fin of (not) - f(no)	1	9
the set of the second of the state of the st		. 2
exists If for willow the whom	he havid (a, 1)	then 2
exists. If f we willforeneable where	9000	9
and the confirmation of the contraction		5.55
Q56) 16 de f 15 son deffereniste	ut ys, fas	continuous
at 10	215 25 . (11101 G8D 3
is so come some for det is biaco	5	1-4
		50.00
at a fallent	1115 4.5	(1) - (1) J
22/14/3	1	1-5
Muses tours to known all museral (3)		- 23,65
the sell for our word little for the	234-058.	= (0) -(1) to
Jan Jan	2.	2000 6-5
(a) righter a secret on the consect of heart		18.07 e
in the state of th	\$0 ×30	
	desired in the	0.80
	3	8 1
	straffe how	1: (i) (i) b
	(1)-(1)	distributors a
	1-1	2
	121=	110-110 . 3
		7