

Assignment-11

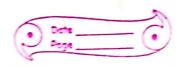
1. find the root of the Following ego using the bisection method.

 $9 \cdot F(x_1) = Sin(x_1) - 3 \cdot OS(0.5x_1)$ $x = 1, f(1) = Sin(1) - 3 \cdot OS(0.5x_1)$

x=2, $f(2) = \sin(2) - 8\cos(0.5x 2) = 0.492$

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3	· · · · · ·		4300		1. N. ST.	2	1	Octob (Fa)
1 teration	χ^{α}	f(a)	Xb	f(b)	χ_{c}	F	(c)	E0001 = 17(1) - 1/4)
· Cardio	4	1 (4)	70				,	¥60
1;	1	-1.791	4	0-492	2.500	-	0.347	0.600
2	2.5	205347	4	0.497	3.250	0	.054	0.231
3	11	02.397	0 354	-2.945		4	-1.452	
4	1.277	-1.452	2.059	2.645		1 Jy	- 2.218	€0.919
5	0.666	-2.217	0.054	-2.945	0.360	5	-2.599	.0.850
6	0.360	-2.599	-0.845	-2.945	0.20	7-1	-2.778	●0.739
7	0.207-	-2.778	0.054	-2.949	5 0.131		-2.86	3 0.586
. 8	0.131	-2.863	0.054	-2.94	5 0.09	3	-2.904	1 0.416
g	0.093	4		-2.94	5 0.07	4	-2.92	5 0.265
10	-11		0054	-2.94	15 0.064	9	-2-939	
11	0.064	-2.935	_	- 2.9			-2.94	0.085
		-2.940	0.054	-2.94	15 0.05	57	-2.94	
	3 0.057		0054	-2.94	5 0.0	56	-2.9	** ** ** ** ** ** ** ** ** ** ** ** **
11		-8-942	0.054	-2-94	12 0.	055	-2.9	
(5		-2-940	0054	-2.9	45 0.0	55	-2.94	214
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here error > 0.01



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p. t(x)	= cos(x)	- asin	(0.5X)	1
12				,

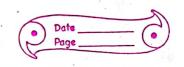
				4.5			
Iteration	χ _α	f(ai)	Υh	f(b)	Xc	f(c)	Error
CARCEL OF S	1	-D·8930	6	0.5368	3.5000	- 3:8884	0.7143
2	3.5ac	-3.8884	6	0.5368	4.7500	-2-0435	0.2632
3	4:7500	1.6	0-56	0.5363	5.3750	-0.7008	
4	5.3750		6	0.5368	5.6875	- 05526	0.0549
5	5.6875	8	6	0.5368	5-8438	0.25/	0.0267
6.	à	一0.0526	5.843		5.7657	0.1014	6.0136
7		-0.05%			57266	0.0299	0.0068
		4	-	1 (1)	THE ST	1 %	=
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4.0		7					200
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	1	1					
						2	200
	1.4	*		A CONTRACTOR	The same of the sa	N. C.	



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C. +(n) -	$\ln(x) + 5x^2 - 6$
	= -1.0000 40
F(2)	- 14 CO315 > A

Iterati	an Xq	F(a)	XP	f(b)	Xc	+(c)	20863
31 V.	- Lower	-1.000	D	14.69	1.500	5.455	0.333
.12	1.501	-1.000	1.500	5.655	1.250	12.035	1.200
3	" "	-1.000	1.250	2.035	1.125	0.445	10.111
DC. 416	1 1 1 1 1	-1.000	1.125	0.445	1.082	-6.294	0.058
115	1.662	-0.300	1.125	-8.001	0.593	-4.760	0.78
6	0.593		1.125	b.445	0.859	-2.462	6.309
117	0.859	-2.462	1.125	0.445	8.992	-1.087	0.134
8	0.992	-1.0877	1.125	0.445	1.058	-0.341	0.062
9	1.058	-0:346	1.125	0.445	1.091	0.044	0.030
10	1.058	-03:06	1.091	0.038	1.074	-0.155	0.015
	1.074	-0.161	1.091	0.038	1.082	-0.061.	0.007
			·	W I			Company of the State of

here 0:007 20:01



2. find the xor	nt of the f	Mowing	equation	usina	the	method
of Newton Ra		U		O	31	

$$f'(x) = \cos x + \sin(0.5x) + 1$$

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	iteration	2001	fo(x)	fice	2n+1	Error
1	4	(1111) E	-0.0361	2:0197	1:0179	0.0176
	2	1.0179	-n.0045	1.998	1-0202	0.0022
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2.		4 118	1 18 18 18	KILA	A Mir As	
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	s810:-		. 1 /3	100 21	7.1.31	
1	(n) =	Inal te	-32		7 1	
	f1(x)	=1 +02	-3/1/1	1/		and a find the second of the second
1	THE WAY	3	0:511	31000		and the second s
	letiration		f(x)	fical	roti	58108
1.0	1 1	1(11 1	70.2817	0.7123	1:3922	0.2817
	2	1.3922	0.1780	1.7420	1.2900	0.0102
TO THE	3	1.2900	6.0174	1.4080	1.2776	0.0037
1 70				87739	1	in the second se
1				7 7 1		***************************************
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	27 1 X 1 1		1 1 1 1	d		,4
. ,	6				437.9	
,	7			1613		
			. \	787		
	1	* · · ·			100	

	proto portab	Date Page
3.	False position method.	
	$f(x) = 5x^3 - (09(2x))$	(1)
iteration	2 40.6536 0 -1.0000 0.0480 -	(XC) Crm 0.9948 405
2	1000	0.9578 20.13
4 5	2 40.6536 0.140 -0.947 0.182 2 40.6536 0.989 -6.904 0.222	-0.904 (J.23)
6 7	2 40.6536 0.222 0848 0.258 2 40.6536 0.258 - 0.784 0.29	-6.783 0.139 1 -0.712 0.11
<u>8</u> 9	2 40.6536 0.291 -0.712 0.32 2 40.6536 0.320 -0.638 0.34	PLANT PASSONE
3.		
		A second

0.057

_	6. f(x) = 10(x) + ex - 3x21
	Veration Xy f(xy) X1 f(xx) Xm + (xm) error
	70 9817 4 70 9812
	1 -0-2817 4 7.9844 101022 -0.6366
	1-1022-0-5-41.
	2 1.1022 -0.5364 7 7.9844 1.2846 -1.0876
	3 1.2846 -1.0869 4 7.9844 1.6100 -2.2971
	4 1.6100 -2.2973 4 7.9844 2.1440 -4.4940
	5 2.1440 -4.4940 4 7.9844 2.8124 -6.0449
	6 2.8124 -6.0449 4 7.9844 3.3241 4.1737
	7 3.3241 -4.1737 4 7.9844 3.5561 -1.6422
	8 3.3561 -3.9023: 4 7.9844 3.5675 -1486
	9 3.5675 -1.4814 4 7.9844 3.6352 -0.44
\parallel	10 3.6352 70.4439 4 7.9844 3.6544-013
	Error = 3.6544-3.6352
3	3.6544
1	
	= 0.0052 < 0.0L