ASSIGNMENT - 1

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Stot: H Subject: Numerical Methods for Engineerk

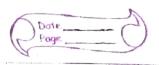


Hssignment - 1 Quel The flow sate, Q in a pipe system connecting two sesesvoirs is described by the equation Qe2-1 =0. Approximate the red yout of the eg? in the interval 05Q5/ Jel Q0 =1 S(Q)=[Qel + el]-0 = pel + el 8'(Q0) = 1e'+e'= 2e'= 2x(2.7182) ~ 5.43656 First iteration

 $Q_1 = Q_0 - f(Q_0)$ =1-(2.7182-1)3-8656 006839

Q2 = Q1 - f(Q1) Scand iteration (C0.6839 x (0.6835) -1) 2× e 0.6834 20.6839 1.7104 3.9632

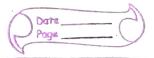
- 0.2523



Mind iteration' $Q_3 = Q_2 - f(Q_2)$ $= 0.2523 - (e^{0.2523} 0.2523 - 1)$ = 0.2523 - (-0.6753)= 0.51466

Fourth iteration $Q_4 = Q_3 - f(Q_3)$ $= 0.5/47 - (e^{-3.5/47} \times 0.5/47 - 1)$ $= 0.5/47 - \left[-0.013 R_6 \right]$ = 0.5/47 + 0.1388 = 0.55618

Approx year soot can be & 0.55618



Piaz					W	
2.	Estimate di	the min	mum wefgh	t of a	bib taps	When
	DOVE 13	CO M)m	VS/Chy :			
	Boxe (h n	2m)	8 10	15 25	132 / 40	50
	Weight ()		6.25 0.30	0040/ 1-25	1170 2015	
		02			,	
- syl - oc	<u> </u>	· A	12	13	14 15	15
				· · · · · · · · · · · · · · · · · · ·		
8	0.25					
		0.025	<u> </u>			
10	0.30		-0.000102	2060 × 10	· · · · · · · · · · · · · · · · · · ·	
		0.02		2-60 × 10-4		
. 15	0.40		0.00433	· · · · · · · · · · · · · · · · · · ·	4.16×10-7	
		0.085		2.52 × 10-4	ę.	1.028 × 107
25	1.25		-0.00121		3.73×10-6	
	<u> </u>	0.0643		1.377 ×10-3		- 0.14 7 x 15
32	1.70		0.03321		-34×10-4	- ,
		0.5625		- 0.01049		
40	2.15		-0.2192	•		
		0015	4			46
50	3.65	:				70
			•		9	<u>·</u>
Ustry	Newson's	divided	dillers on	o Long /		
	E [x, 7/2]	$\gamma = f_2 -$	fi Breit	J OFFICE	<i>Egr.</i>	
		72-	lyferend fi x,			
			1			



And Smally

$$\Delta^{6} = (-0.18810 - (-0.288/0-7) - -0.0202 - 2.75 \times (0^{-7})$$

$$(8/5 50-8)$$

Very Newbow Divided formula -

$$= 8.25 + (20-8)(0.025) + (12)(20-10)(-0.000707) + (2x(0x(20-15))(2.6x(0^{-9})) + B$$

$$= (2x(0x(20-15))(2.6x(0^{-9})) + B$$

$$= (2x(0x) + 5x(20-25)) + (9.16x(0^{-7})) + (12x(0x) + (20-32)x(1.028) + (1.028) +$$

$$= 0.25 + 0.3 + (-0.01729) + 0.156 - (1.243 \times 10^{-3})$$

$$+ (3.7008 \times (0^{-3}) + 0.148$$

approximately 0.89088708 kg