

3 二. (3) 解: 由题可知

则将公式改写为  $x = \sqrt[3]{x^2+1}$

~~代~~ 即  $x_{k+1} = \sqrt[3]{x_k^2+1}$

代入  $x_0 = 1.4$  则有

k	$x_k$	k	$x_k$	k	$x_k$
0	1.4	5	1.4334	10	1.43390
1	1.4494	6	1.43269	11	1.4330
2	1.42529	7	1.4332		
3	1.43683	8	1.43294		∴ 为 1.433
4	1.43028	9	1.4331		

课堂:  $x_{k+1} = x + C(x^2 - 5)$ ,

则  $f(x) = x_{k+1} = x + C(x^2 - 5)$

$$f'(x) = 1 + 2Cx$$

∴ 由在根  $x = \sqrt{5}$  局部收敛

由收敛条件可有:  $|1 + 2C\sqrt{5}| < 1$

$$\therefore C \in (-\frac{1}{\sqrt{5}}, 0)$$