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Exercise 3
    Fixed points
    p(a) = a
     O= X + sin X =7 X=X+sing =7 since =0 =7 TT
     0 + sin (0) = 0 +0 >0
    Start with Xo = 1
    x = 1+ Sin (1) = 1.8447
    82= 1.84147 + Sinch. 84147) = 2.80506
    X3 = 2.80506 + sin (2.80506) = 3.13528
    X4 = 3.13528+5.7(3.13528) = 3.14159
    X5 = 3.14 159 + Sin 13.141597 = 3.14 159
          Converges to TT
     Fixed points: 0 and XTI where x is a scalar cinteger)
    Show that (2) converges to IT for any initial XO
    For X LTT
    - As shown in part 1, iterating with X° LTT, will result in XK slowly incrementing to TI. Once TI is reached, XK will no longer in crement.
    For X 7TT
   -Similar to condition XOLT, except XF will
    Stowly decrement to IT. Take xo=ut for example:
    E,= 4+ sincut) = 3.24320
    82= 3.24320 + Sin (3.24320) -3.14177
    X3 = 3.14177 + 5:n (3.14177) = 3.14159
    4:3,14159 +5in (3,14159) 3,14159
    No matter the initial Starting point in (T/2, 3 52)
   the Sequence will converge to TT
   Convergence order of the sequence
5.
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Mathan Baldie KMS 147 Frontier B x + sin(x) Fived point Ising => Singa=0 = 7 II X = 3.80506 1401 (1.80 000) = 3.135  $\lim_{k\to\infty}\frac{\chi_{k+1}}{\chi_{k}}\approx\frac{\pi}{\pi}=1$ Convergence order =1 Fixed points in and XII where X is a relast Cinteger) Di Story had (2) convers to it or any after you HIN IT I by Alley sallowed I long it must Aare the XI clouds increased to T. Once in - Similar to condition X 2 & assess X will Stordy devenory 1811 property with use V - 3 143/8 + 5,0 08 11446 1- 3 11477 Y = 3. (4.77 1 80 (3 14 (77) > 2 12 164 ( VILLE STATES TO WILL BURNERS THE MARKET THE SALES SPECIAL POPULAR OF THE CALL at something the more by 3. Convergence order of the Sequence