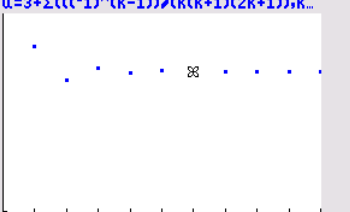


Nilakantha series Exploration with TI-84 CE

<p>1. Calculations on home screen</p> <ul style="list-style-type: none"> Use α $y=$ to access MathPrint templates Use \leftarrow to copy / paste previous expressions 	<p>NORMAL FLOAT AUTO REAL RADIAN MP</p> $3 + \frac{4}{2 \times 3 \times 4} = \frac{19}{6}$ <p>Ans \rightarrow F \rightarrow D</p> $3 + \frac{4}{2 \times 3 \times 4} - \frac{4}{4 \times 5 \times 6} = \frac{47}{15}$ <p>Ans \rightarrow F \rightarrow D</p>
<p>2. Graphing sequence of partial sums</p> <ul style="list-style-type: none"> Change mode to sequence 	<p>NORMAL FLOAT AUTO REAL RADIAN MP</p> <p>FUNCTION TYPES</p> <p>MATHPRINT CLASSIC</p> <p>NORMAL SCI ENG</p> <p>FLOAT 0 1 2 3 4 5 6 7 8 9</p> <p>RADIAN DEGREE</p> <p>FUNCTION PARAMETRIC POLAR SEQ</p> <p>THICK DOT-THICK THIN DOT-THIN</p> <p>SEQUENTIAL SIMUL</p> <p>REAL a+bi re^(θi)</p> <p>FULL HORIZONTAL GRAPH-TABLE</p> <p>FRACTIONTYPE: $\frac{a}{b}$ Un/d</p> <p>ANSWERS: AUTO DEC</p> <p>STAT DIAGNOSTICS: OFF ON</p> <p>STAT WIZARDS: ON OFF</p> <p>SET CLOCK: 01/01/15 12:00 AM</p> <p>LANGUAGE: ENGLISH</p>
<ul style="list-style-type: none"> Enter sequence as shown. Use $u(1)=19/6$ 	<p>NORMAL FLOAT AUTO REAL RADIAN MP</p> <p>Plot1 Plot2 Plot3</p> <p>TYPE: SEQ(n) SEQ(n+1) SEQ(n+2)</p> <p>nMin=1</p> $u(n) = 3 + \sum_{k=1}^n \left(\frac{(-1)^{k-1}}{k(k+1)(2k+1)} \right)$ <p>u(1) = 3.16666666666667</p> <p>u(2) =</p> <p>v(n) =</p> <p>v(1) =</p>
<ul style="list-style-type: none"> Set window 	<p>NORMAL FLOAT AUTO REAL RADIAN MP</p> <p>WINDOW</p> <p>nMin=1</p> <p>nMax=10</p> <p>PlotStart=1</p> <p>PlotStep=1</p> <p>Xmin=0</p> <p>Xmax=10</p> <p>Xscl=1</p> <p>Ymin=3</p> <p>Ymax=3.2</p>
<ul style="list-style-type: none"> Use graph trace 	<p>NORMAL FLOAT AUTO REAL RADIAN MP</p> <p>u = 3 + $\sum_{k=1}^n \left(\frac{(-1)^{k-1}}{k(k+1)(2k+1)} \right)$</p>  <p>n=6 X=6 Y=3.1408813</p>

3. Displaying sequence of partial sums in a table

- Access table using $\boxed{2nd} \boxed{graph}$

NORMAL FLOAT AUTO REAL RADIAN MP					
PRESS + FOR ΔTbl					
n	$u(n)$				
3	$\frac{1321}{420}$				
4	$\frac{989}{315}$				
5	$\frac{21779}{6930}$				
6	3.1409				
7	3.1421				
8	3.1413				
9	3.1418				

$n=7$

4. Recursion on home screen

NORMAL FLOAT AUTO REAL RADIAN MP

{1,u(1)}
 {1 3.166666667}
 {Ans(1)+1,u(Ans(1)+1)}
 {2 $\frac{47}{15}$ }
 {Ans(1)+1,u(Ans(1)+1)}
 {3 $\frac{1321}{420}$ }

■

NORMAL FLOAT AUTO REAL RADIAN MP

{Ans(1)+1,u(Ans(1)+1)}
 {5 $\frac{21779}{6930}$ }
 {Ans(1)+1,u(Ans(1)+1)}
 {6 3.140881341}
 {Ans(1)+1,u(Ans(1)+1)}
 {7 3.142071817}
 {Ans(1)+1,u(Ans(1)+1)}
 {8 3.141254824}