```
> read `DMB8.txt`
```

For a list of the Main procedures type: Help8(); for help with a specific procedure type: Help6 (ProcedureName); for example Help6(RandomMC);

For a list of the other procedures type: Help8a(); for help with a specific procedure type: Help6 (ProcedureName); for example Help6(RandomMC); (1)

```
> g := raRF(x, 3)
```

$$g := \frac{4x^3 + 2x^2 + 2x + 10}{10x^3 + 9x^2 + 3x + 8} \quad (2)$$

```
> evalf(SSS(g, x))
```

$$[0.7396118112] \quad (3)$$

```
> Orb(g, x, 100.1, 1000, 1010)
```

[0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110] (4)

```
> Orb(g, x, 10.1, 1000, 1010)
```

[0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110] (5)

```
> Orb(g, x, -10.1, 1000, 1010)
```

[0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110] (6)

```
> Orb(g, x, -100.1, 1000, 1010)
```

[0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110, 0.7396118110] (7)

```
> g := raRF(x, 3)
```

$$g := \frac{9x^3 + 10x^2 + 8x + 2}{7x^3 + 7x^2 + 6x + 1} \quad (8)$$

```
> evalf(SSS(g, x))
```

$$[1.360052363] \quad (9)$$

```
> Orb(g, x, 100.1, 1000, 1010)
```

[1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363] (10)

```
> Orb(g, x, 10.1, 1000, 1010)
```

[1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363] (11)

```
> Orb(g, x, -10.1, 1000, 1010)
```

[1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, (12)

1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363]

> $Orb(g, x, -100.1, 1000, 1010)$

[1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363, 1.360052363] (13)

>

>

> $g := raRF(x, 3)$

$$g := \frac{3x^3 + 5x^2 + 3x + 3}{x^3 + 3x^2 + 10x + 8} \quad (14)$$

> $evalf(SSS(g, x))$

[0.4186175181] (15)

> $Orb(g, x, 100.1, 1000, 1010)$

[0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180] (16)

> $Orb(g, x, 10.1, 1000, 1010)$

[0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179] (17)

> $Orb(g, x, -10.1, 1000, 1010)$

[0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180] (18)

> $Orb(g, x, -100.1, 1000, 1010)$

[0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180, 0.4186175179, 0.4186175182, 0.4186175181, 0.4186175180] (19)

> $g := raRF(x, 3)$

$$g := \frac{5x^3 + 5x^2 + 3x + 1}{2x^3 + 10x^2 + 10x + 10} \quad (20)$$

> $evalf(SSS(g, x))$

[0.1292929950] (21)

> $Orb(g, x, 100.1, 1000, 1010)$

[0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950] (22)

> $Orb(g, x, 10.1, 1000, 1010)$

[0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950] (23)

> $Orb(g, x, -10.1, 1000, 1010)$

$$[0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950] \quad (24)$$

> $Orb(g, x, -100.1, 1000, 1010)$

$$[0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950, 0.1292929950] \quad (25)$$

>

> $g := raRF(x, 3)$

$$g := \frac{9x^3 + 2x^2 + 4x + 8}{4x^3 + 7x^2 + 9x + 5} \quad (26)$$

> $evalf(SSS(g, x))$

$$[0.9127501374] \quad (27)$$

> $Orb(g, x, 100.1, 1000, 1010)$

$$[0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369, 0.9127501369] \quad (28)$$

> $Orb(g, x, 10.1, 1000, 1010)$

$$[0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374] \quad (29)$$

> $Orb(g, x, -10.1, 1000, 1010)$

$$[0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374] \quad (30)$$

> $Orb(g, x, -100.1, 1000, 1010)$

$$[0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374, 0.9127501374] \quad (31)$$

>

> $g := raRF(x, 3)$

$$g := \frac{10x^3 + 9x^2 + 10x + 3}{8x^3 + 7x^2 + 9x + 4} \quad (32)$$

> $evalf(SSS(g, x))$

$$[1.164908077] \quad (33)$$

> $Orb(g, x, 100.1, 1000, 1010)$

$$[1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076] \quad (34)$$

> $Orb(g, x, 10.1, 1000, 1010)$

$$[1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076] \quad (35)$$

```
> Orb(g, x, -10.1, 1000, 1010)
```

$$[1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076] \quad (36)$$

```
> Orb(g, x, -100.1, 1000, 1010)
```

$$[1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076, 1.164908076] \quad (37)$$

```
>
> g := raRF(x, 3)
```

$$g := \frac{2x^3 + 10x^2 + x + 9}{x^3 + 8x^2 + 7x + 4} \quad (38)$$

```
> evalf(SSS(g, x))
```

$$[1.094863281] \quad (39)$$

```
> Orb(g, x, 100.1, 1000, 1010)
```

$$[1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281] \quad (40)$$

```
> Orb(g, x, 10.1, 1000, 1010)
```

$$[1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281] \quad (41)$$

```
> Orb(g, x, -10.1, 1000, 1010)
```

$$[1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281] \quad (42)$$

```
> Orb(g, x, -100.1, 1000, 1010)
```

$$[1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281, 1.094863281] \quad (43)$$

```
>
> g := raRF(x, 3)
```

$$g := \frac{7x^3 + x^2 + 4x + 6}{9x^3 + 5x^2 + 9x + 2} \quad (44)$$

```
> evalf(SSS(g, x))
```

$$[0.7927386281] \quad (45)$$

```
> Orb(g, x, 100.1, 1000, 1010)
```

$$[0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279] \quad (46)$$

```
> Orb(g, x, 10.1, 1000, 1010)
```

$$[0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, \quad (47)$$

0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279]

> $Orb(g, x, -10.1, 1000, 1010)$

[0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279] (48)

> $Orb(g, x, -100.1, 1000, 1010)$

[0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279, 0.7927386279] (49)

>

> $g := raRF(x, 3)$

$$g := \frac{4x^3 + 3x^2 + 4x + 9}{10x^3 + 4x^2 + 4x + 6} \quad (50)$$

> $evalf(SSS(g, x))$

[0.8947709009] (51)

> $Orb(g, x, 100.1, 1000, 1010)$

[0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013] (52)

> $Orb(g, x, 10.1, 1000, 1010)$

[0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013] (53)

> $Orb(g, x, -10.1, 1000, 1010)$

[0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013] (54)

> $Orb(g, x, -100.1, 1000, 1010)$

[0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013, 0.8947709013] (55)

>

> $g := raRF(x, 3)$

$$g := \frac{2x^3 + 7x^2 + 2x + 8}{7x^3 + 5x^2 + 3x + 5} \quad (56)$$

> $evalf(SSS(g, x))$

[0.9672041816] (57)

> $Orb(g, x, 100.1, 1000, 1010)$

[0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817] (58)

> $Orb(g, x, 10.1, 1000, 1010)$

[0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817] **(59)**

> $Orb(g, x, -10.1, 1000, 1010)$

[0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817] **(60)**

> $Orb(g, x, -100.1, 1000, 1010)$

[0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817, 0.9672041812, 0.9672041817] **(61)**

>

> **read** `DMB8.txt`

For a list of the Main procedures type: Help8(); for help with a specific procedure type: Help6(ProcedureName); for example Help6(RandomMC);

For a list of the other procedures type: Help8a(); for help with a specific procedure type: Help6(ProcedureName); for example Help6(RandomMC); **(1)**

> $Orb(1 \cdot x \cdot (1 - x), x, 0.5, 2000, 2030)$

[0.0004976675995, 0.0004974199265, 0.0004971724999, 0.0004969253194, 0.0004966783846, 0.0004964316952, 0.0004961852508, 0.0004959390510, 0.0004956930954, 0.0004954473838, 0.0004952019157, 0.0004949566908, 0.0004947117087, 0.0004944669690, 0.0004942224714, 0.0004939782155, 0.0004937342010, 0.0004934904275, 0.0004932468947, 0.0004930036022, 0.0004927605496, 0.0004925177367, 0.0004922751630, 0.0004920328281, 0.0004917907318, 0.0004915488737, 0.0004913072534, 0.0004910658706, 0.0004908247249, 0.0004905838160, 0.0004903431435] **(2)**

> $Orb(2 \cdot x \cdot (1 - x), x, 0.5, 2000, 2030)$

[0.5000000000, 0.5000000000] **(3)**

> $Orb(2.5 \cdot x \cdot (1 - x), x, 0.5, 2000, 2030)$

[0.6000000000, 0.6000000000] **(4)**

> $Orb(3.1 \cdot x \cdot (1 - x), x, 0.5, 2000, 2030)$

[0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, 0.5580141245, 0.7645665203, **(5)**

0.5580141245]

> $Orb(3.2 \cdot x \cdot (1 - x), x, 0.5, 2000, 2030)$

[0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091, 0.7994554906, 0.5130445091] **(6)**

> $Orb(3.3 \cdot x \cdot (1 - x), x, 0.5, 2000, 2030)$

[0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198, 0.8236032832, 0.4794270198] **(7)**

> $Orb(3.5 \cdot x \cdot (1 - x), x, 0.5, 2000, 2030)$

[0.5008842111, 0.8749972637, 0.3828196827, 0.8269407062, 0.5008842111, 0.8749972637, 0.3828196827, 0.8269407062, 0.5008842111, 0.8749972637, 0.3828196827, 0.8269407062, 0.5008842111, 0.8749972637, 0.3828196827, 0.8269407062, 0.5008842111, 0.8749972637, 0.3828196827, 0.8269407062, 0.5008842111, 0.8749972637, 0.3828196827, 0.8269407062, 0.5008842111, 0.8749972637, 0.3828196827, 0.8269407062, 0.5008842111, 0.8749972637, 0.3828196827] **(8)**

> # *For some values of k, the sequence doesn't converge to a single value but repeats the same values in a cycle eventually*

```
> read `DMB8.txt`
```

For a list of the Main procedures type: Help8(); for help with a specific procedure type: Help6 (ProcedureName); for example Help6(RandomMC);

For a list of the other procedures type: Help8a(); for help with a specific procedure type: Help6 (ProcedureName); for example Help6(RandomMC); **(1)**

```
> f := MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], k, x)
```

$$f := \frac{x^9}{k} - \frac{36\,x^8}{k} + \frac{546\,x^7}{k} - \frac{4536\,x^6}{k} + \frac{22449\,x^5}{k} - \frac{67284\,x^4}{k} + \frac{118124\,x^3}{k} - \frac{109584\,x^2}{k} + \frac{40320\,x}{k} + x \quad \textbf{(2)}$$

```
> Help8(MakeNicePol)
```

MakeNicePol(L,k,x): inputs a set of numbers, outputs a polynoomial having these fixed points. k is parameter you can play with. Try:

MakeNicePol([1,2,3],7,x); **(3)**

```
> Help8(SSS)
```

SSS(f,x): inputs a function f of x, outputs all the STABLE steady-states of the associated recurrence a(n+1)=f(a(n)). Try:

*SSS(5/2*x*(1-x),x);* **(4)**

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 1, x), x)
```

$$[\,] \quad \textbf{(5)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 500, x), x)
```

$$[3, 5] \quad \textbf{(6)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 250, x), x)
```

$$[\,] \quad \textbf{(7)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 375, x), x)
```

$$[3, 5] \quad \textbf{(8)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 300, x), x)
```

$$[\,] \quad \textbf{(9)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 350, x), x)
```

$$[\,] \quad \textbf{(10)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 360, x), x)
```

$$[\,] \quad \textbf{(11)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 367, x), x)
```

$$[3, 5] \quad \textbf{(12)}$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 365, x), x)
```

(13)

$$[3, 5] \quad (13)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 363, x), x)
```

$$[3, 5] \quad (14)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 361, x), x)
```

$$[3, 5] \quad (15)$$

```
> # 361 is the smallest k such that there are 2 SSS
> Orb(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 361, x), x, 3.4, 1000, 1010)
```

$$[3.0003249, 2.9996760, 3.0003166, 2.9996836, 3.0003200, 2.9996888, 3.0003030, 2.9996971, 3.0003073, 2.9996926, 3.0003042] \quad (16)$$

```
> Orb(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 361, x), x, 5.4, 1000, 1010)
```

$$[5.0005525, 4.9994615, 5.0005980, 4.9994259, 5.0006803, 4.9993623, 5.0005312, 4.9993682, 5.0006491, 4.9992884, 5.0006114] \quad (17)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 1000, x), x)
```

$$[3, 5] \quad (18)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 4000, x), x)
```

$$[1, 3, 5, 7] \quad (19)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2000, x), x)
```

$$[3, 5] \quad (20)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 3000, x), x)
```

$$[1, 3, 5, 7] \quad (21)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2500, x), x)
```

$$[3, 5] \quad (22)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2750, x), x)
```

$$[1, 3, 5, 7] \quad (23)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2600, x), x)
```

$$[1, 3, 5, 7] \quad (24)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2550, x), x)
```

$$[1, 3, 5, 7] \quad (25)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2525, x), x)
```

$$[1, 3, 5, 7] \quad (26)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2515, x), x)
```

$$[3, 5] \quad (27)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2520, x), x)
```

$$[3, 5] \quad (28)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2522, x), x)
```

$$[1, 3, 5, 7] \quad (29)$$

```
> SSS(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2521, x), x)
```

$$[1, 3, 5, 7] \quad (30)$$

```
> # 2521 is the smallest k such that there are 4 SSS
```

```
> Orb(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2521, x), x, 1.1, 1000, 1010)
```

$$[1.00446666, 0.99560040, 1.00445773, 0.99560910, 1.00444881, 0.99561775, 1.00443992, 0.99562636, 1.00443108, 0.99563496, 1.00442225] \quad (31)$$

```
> Orb(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2521, x), x, 3.1, 1000, 1010)
```

$$[2.99999944, 2.99999942, 2.99999928, 2.99999940, 2.99999914, 2.99999952, 2.99999988, 3.00000010, 3.00000054, 2.99999921, 2.99999851] \quad (32)$$

```
> Orb(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2521, x), x, 5.1, 1000, 1010)
```

$$[4.99998819, 5.00000686, 4.99999614, 4.99999196, 5.00000793, 4.99999232, 4.99998305, 4.99999152, 4.99998645, 4.99997930, 4.99997679] \quad (33)$$

```
> Orb(MakeNicePol([1, 2, 3, 4, 5, 6, 7, 8], 2521, x), x, 7.1, 1000, 1010)
```

$$[7.0092564, 6.9905882, 7.0092033, 6.9905529, 7.0092564, 6.9905882, 7.0092033, 6.9905529, 7.0092564, 6.9905882, 7.0092033] \quad (34)$$

```
>
```