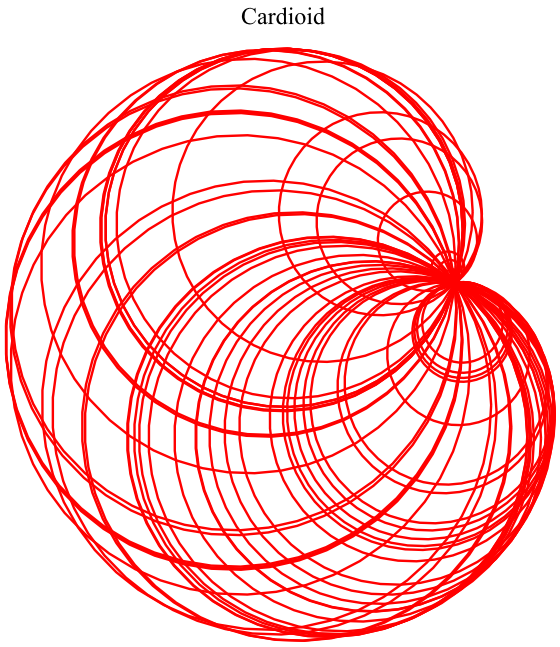
```
with(geometry) :
circle(c0, [point(o, 0, 0), 1]) :
 randpoint(A0, c0) :


i := 1 :
n := 50 : while i ≤ n do   randpoint(A||i, c0);   if evalf(HorizontalCoord(A0) - HorizontalCoord(A
     ||i)) ≠ 0 then      circle(c||i, [A0, A||i]);      i := i + 1;   end if; end do:
draw({seq(c||i, i = 0..n)}, printtext = false, scaling = constrained, axes = none, title = "Cardioid")
```

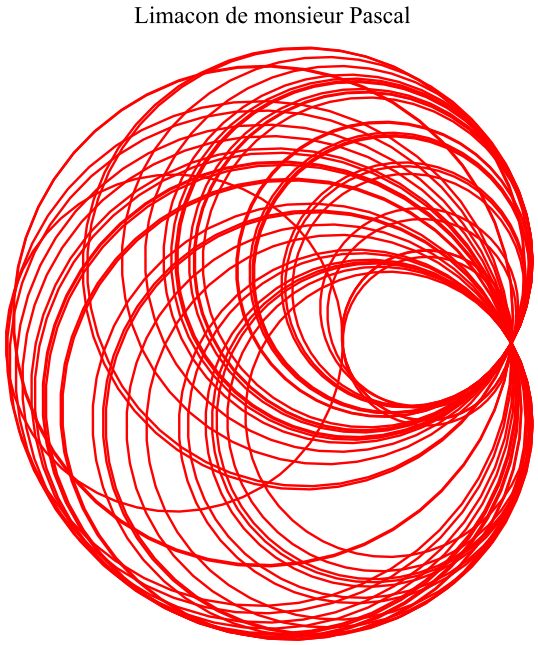



```
circle(c0, [point(o, 0, 0), 1]) :


point(A0, 2, 0) :


i := 1 : n := 50 :
while i ≤ n do  randpoint(A||i, c0);  if evalf(HorizontalCoord(A0) - HorizontalCoord(A||i))
     ≠ 0 then     circle(c||i, [A0, A||i]);     i := i + 1;  end if;end do:
```

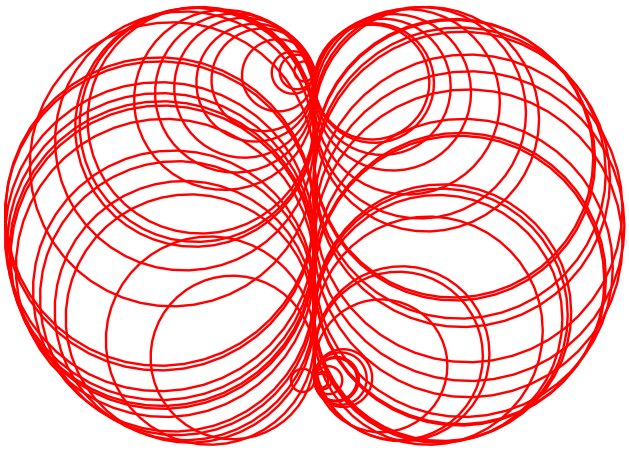
```
draw( {seq( c || i, i = 0 ..n ) }, printtext = false, scaling = constrained, axes = none, title
      = "Limacon de monsieur Pascal" )
```




```
circle( c0, [ point( o, 0, 0 ), 1 ] ) :
```

```
line( l, [ point( M, 0, -2 ), point( N, 0, 2 ) ] ) :
n := 60 :
for i to n do    randpoint( A || i, c0 );    circle( c || i, [ A || i, distance( A || i, l ) ] );end do:
draw( {seq( c || i, i = 1 ..n ) }, printtext = false, scaling = constrained, axes = none, title = "Nephroid" )
```

Nephroid



triangle(*T*, [*point*(*A2*, 0, 0), *point*(*A1*, 2, 4), *point*(*A3*, 7, 0)]) :

circumcircle(*C*, *T*,'*centername*'= *OO*) :

Find the altitudes of T

altitude(*A2A22*, *A2*, *T*, *A22*) :

altitude(*A3A33*, *A3*, *T*, *A33*) :

altitude(*A1A11*, *A1*, *T*, *A11*) :

Find the orthocenter **and** *centroid of T*

orthocenter(*H*, *T*) : *centroid*(*G*, *T*) :

Find the medians of T

median(*A1M1*, *A1*, *T*, *M1*) :

median(*A2M2*, *A2*, *T*, *M2*) :

median(*A3M3*, *A3*, *T*, *M3*) :

dsegment(*dsg1*, *OO*, *H*) : *dsegment*(*dsg2*, *H*, *G*) :

dsegment(*OM1*, *OO*, *M1*) : *dsegment*(*OM2*, *OO*, *M2*) :

dsegment(*OM3*, *OO*, *M3*) :

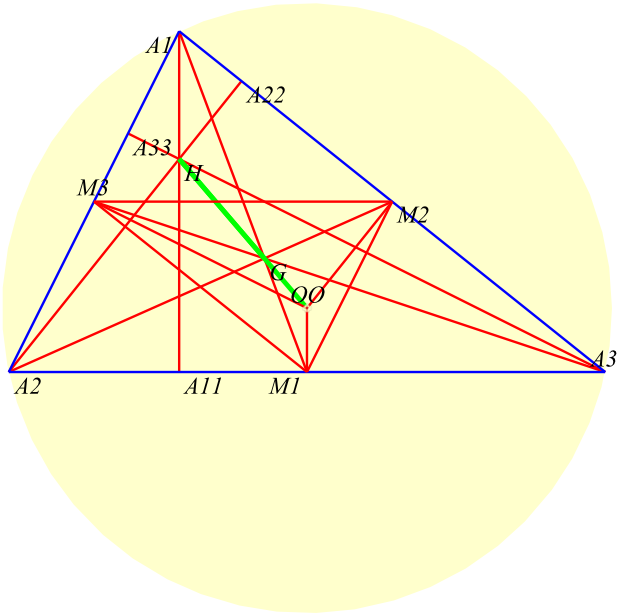
triangle(*T1*, [*M1*, *M2*, *M3*]) :
AreCollinear(*OO*, *H*, *G*)

true **(1)**

simplify(*distance*(*H*, *G*) − 2 *distance*(*G*, *OO*))

0 **(2)**

draw([*C*(*color* = '*COLOR*'(*RGB*, 1.00000000, 1.00000000, 0.8000000000), *filled* = *true*), *T*(*color* = *blue*), *T1*, *A3M3*, *A2M2*, *A1M1*, *A2A22*, *A3A33*, *A1A11*, *dsg1*(*style* = *line*, *color* = *green*, *thickness* = 3), *dsg2*(*thickness* = 3, *color* = *green*), *OM1*, *OM2*, *OM3*], *axes* = *none*, *printtext* = *true*)


A1
A22
A33
H
M3
M2
G
QO
A3
A2
A11
M1