Numbers in the Sky(viewing Sculpture)

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Bellingham, Washington, USA

Saturday, May 12, 2007


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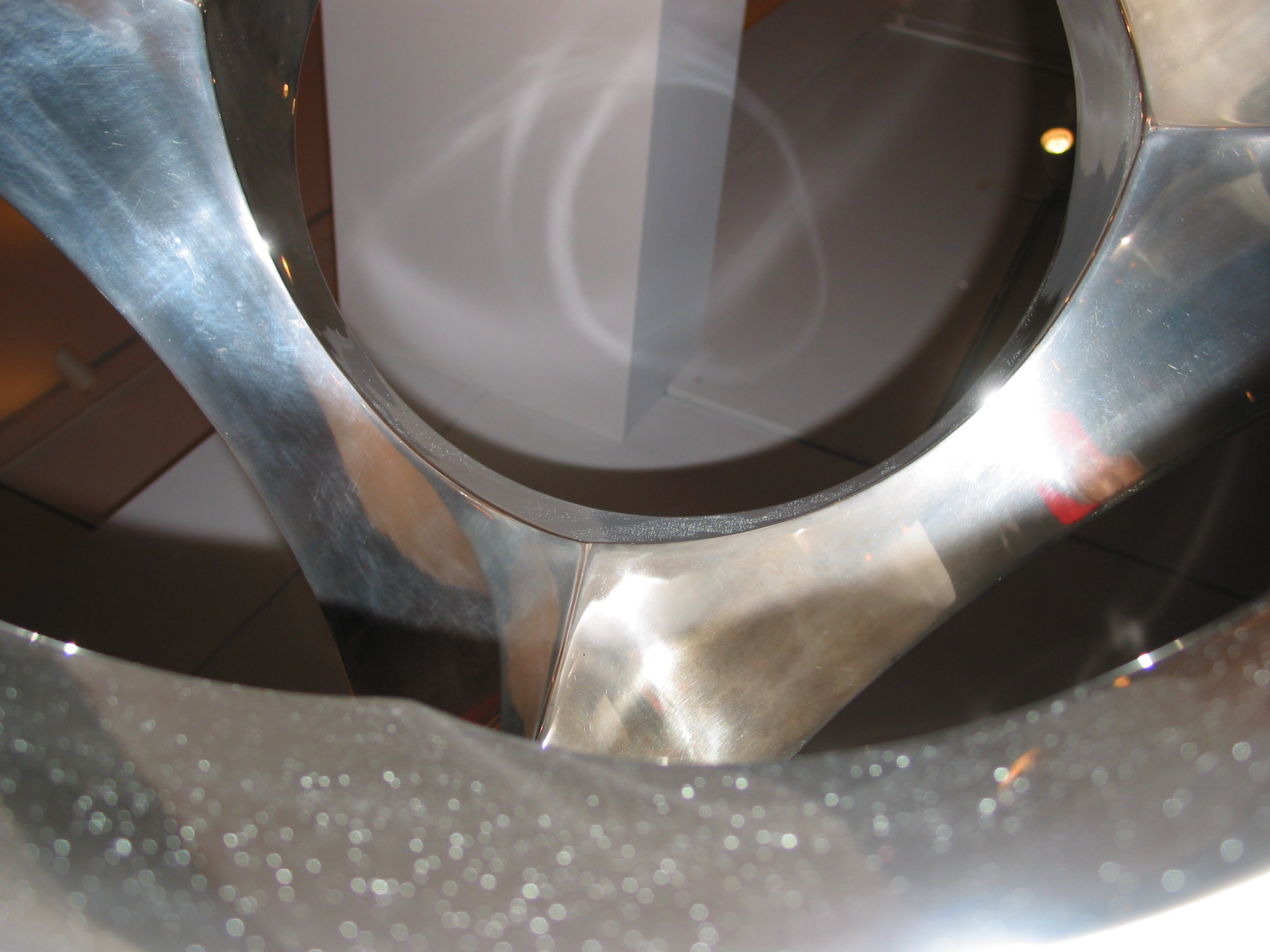

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KLIPSUN

A Western Washington University Publication

street racing

dog sledding

artificial reefs

Within the metal lies a math equation, which math professor Branko Curgus has had his students solve in the past.

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Within the metal lies a math equation, which math professor Branko Curgus has had his students solve in the past. This is just one example of how those who aren't interested in art can relate to the sculptures.

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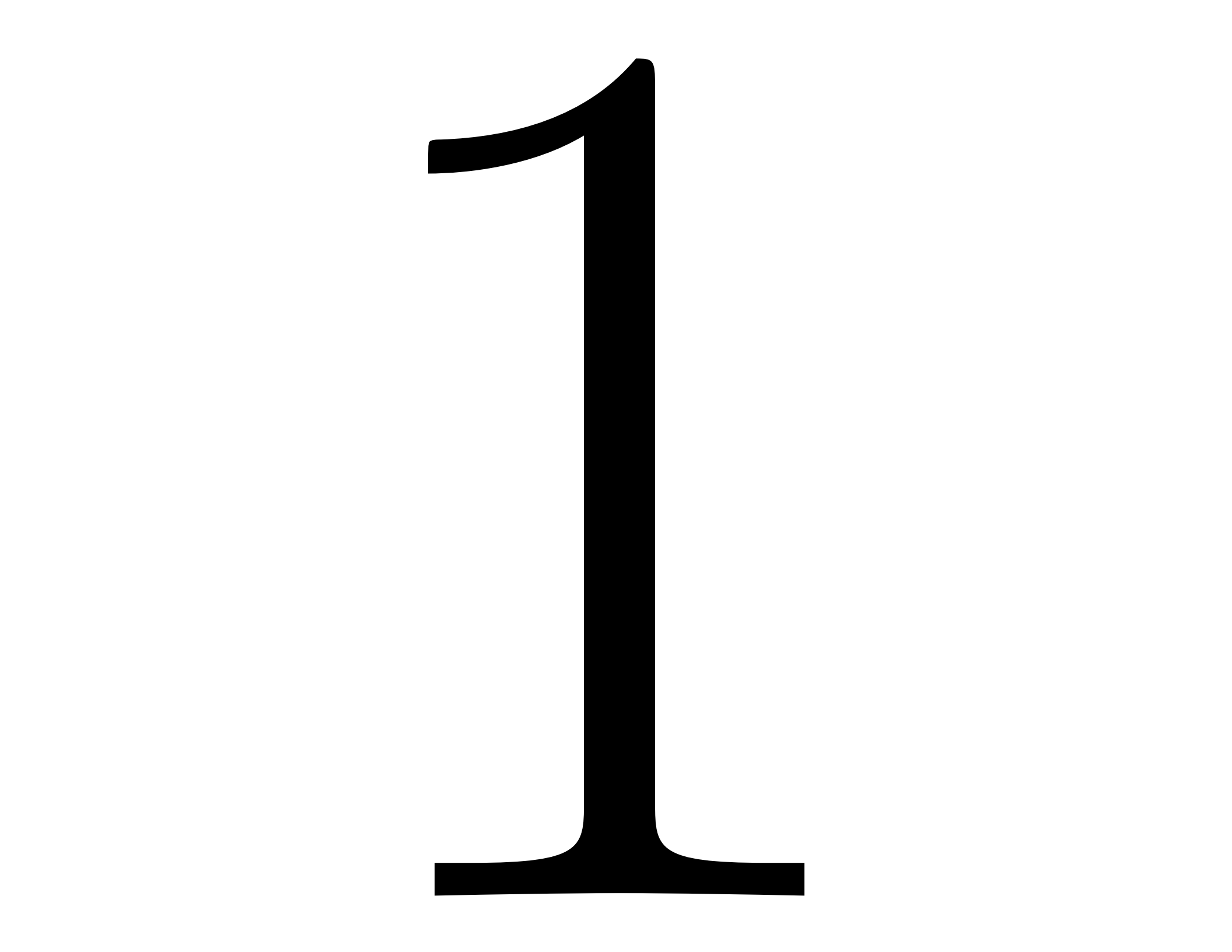
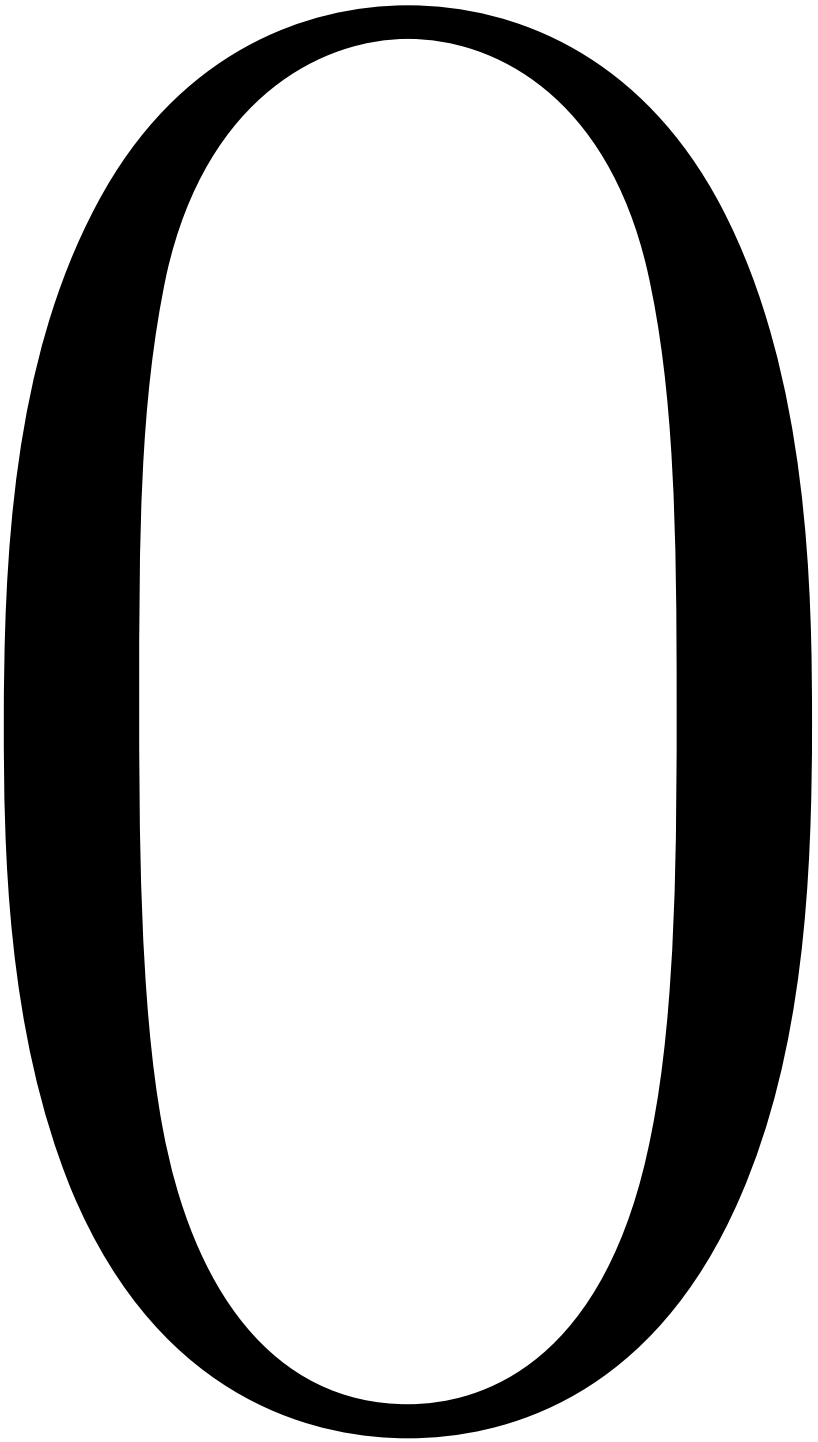
Do

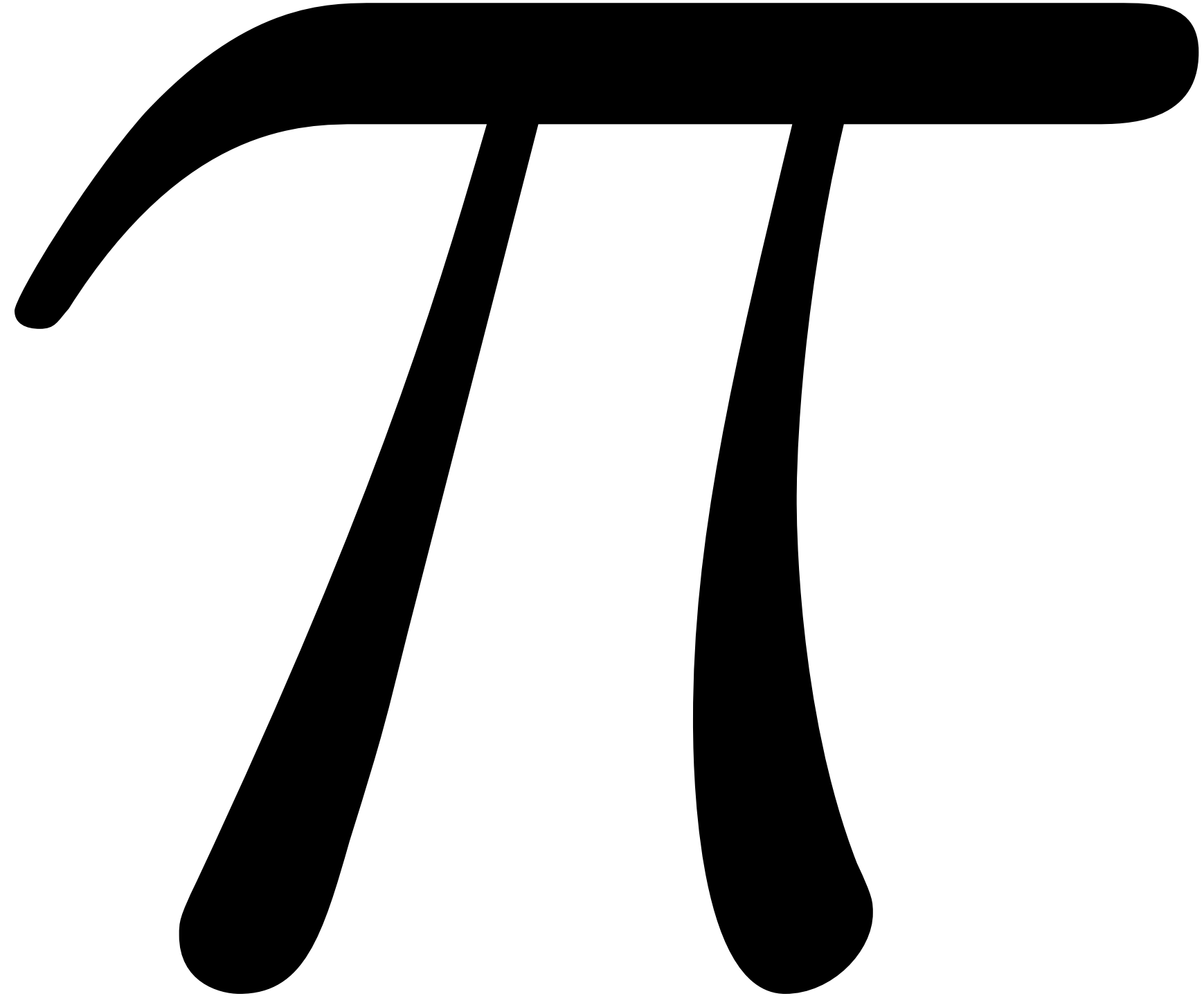
Math!

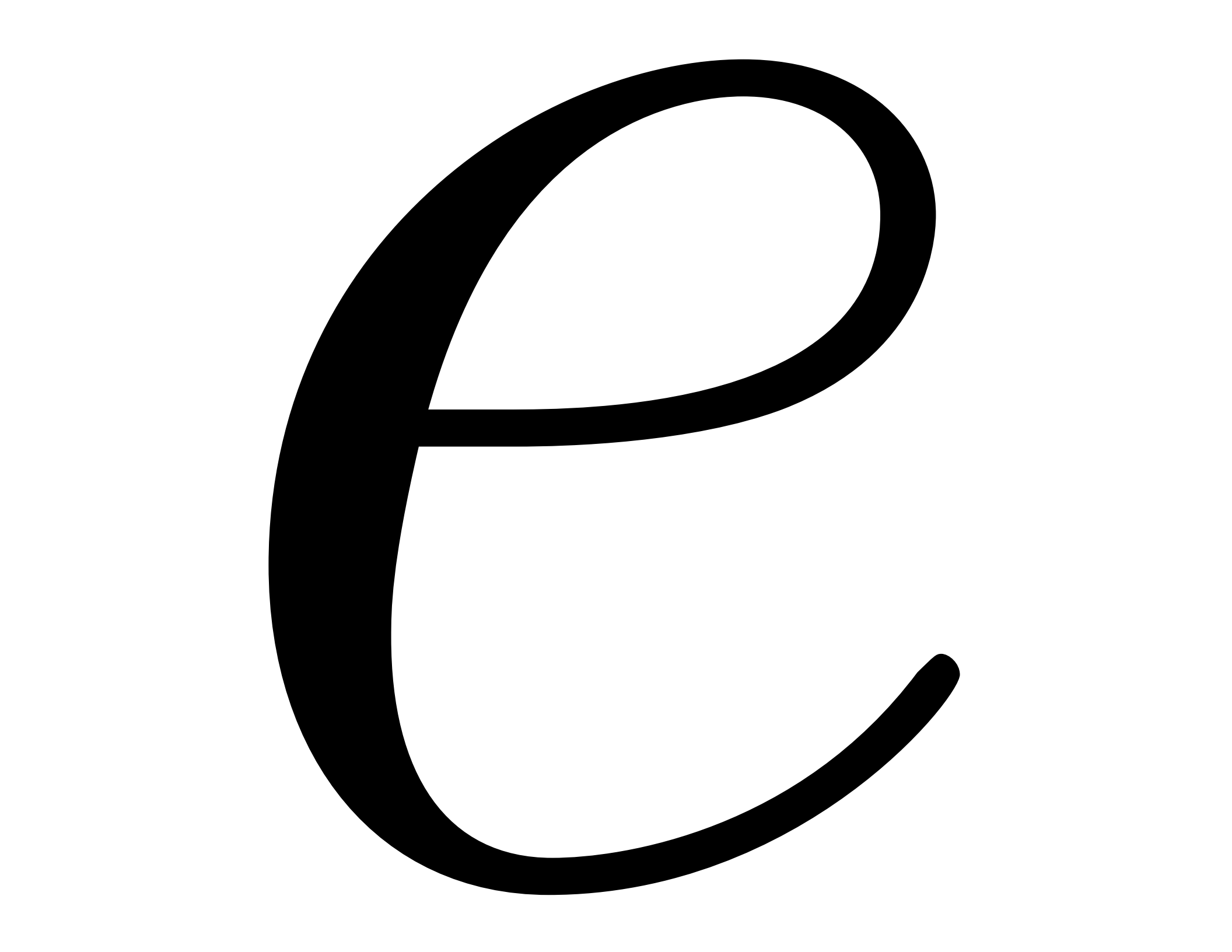
Make

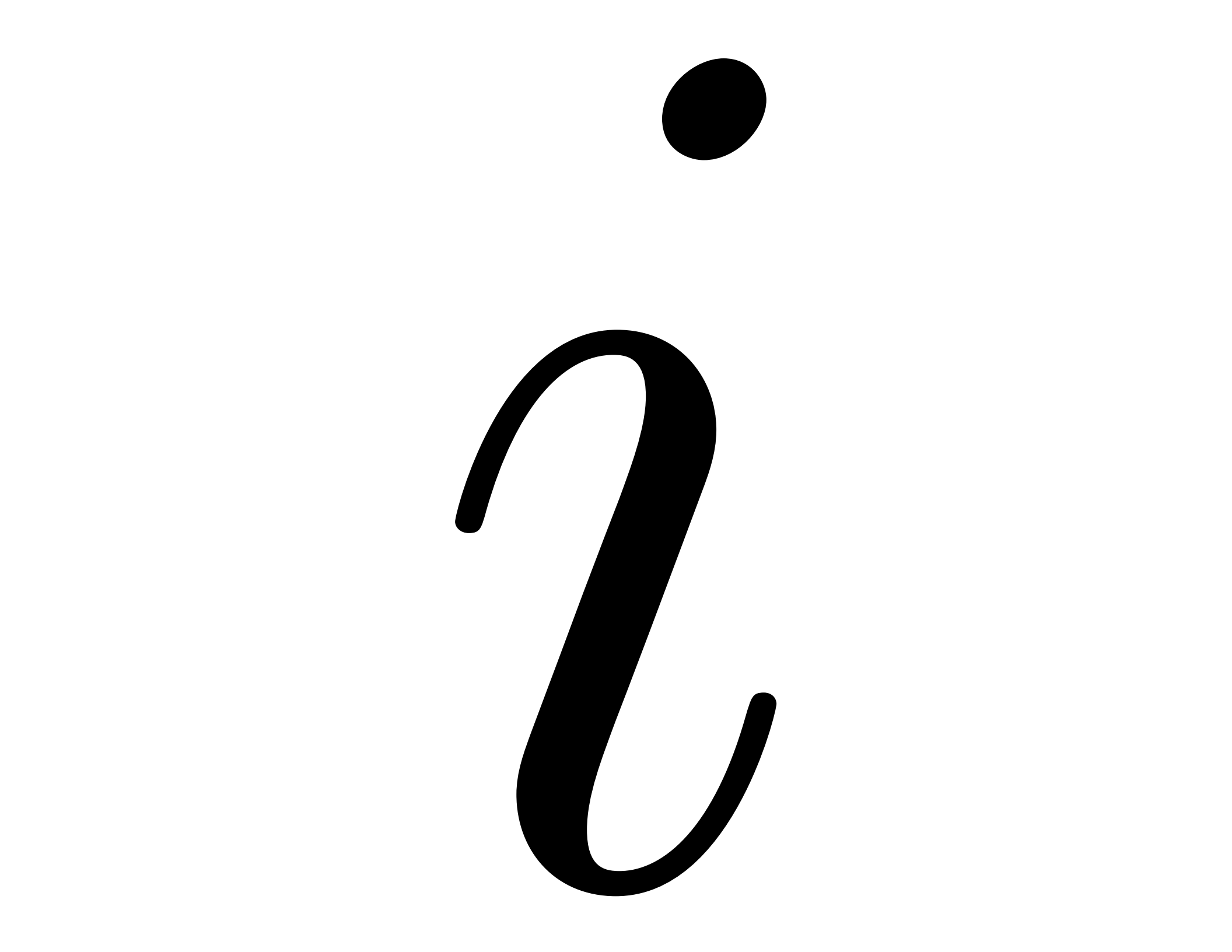
Make sense!











$$e^{i\pi} + 1 = 0$$

$$e^{i\pi} + 1 = 0$$

The Hall of Fame of Numbers:

$$1 \quad 0 \quad \pi \quad e \quad i$$

The number

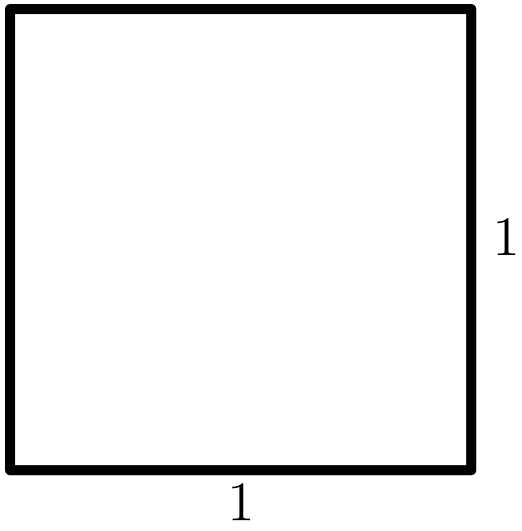
1

represented
as a length.

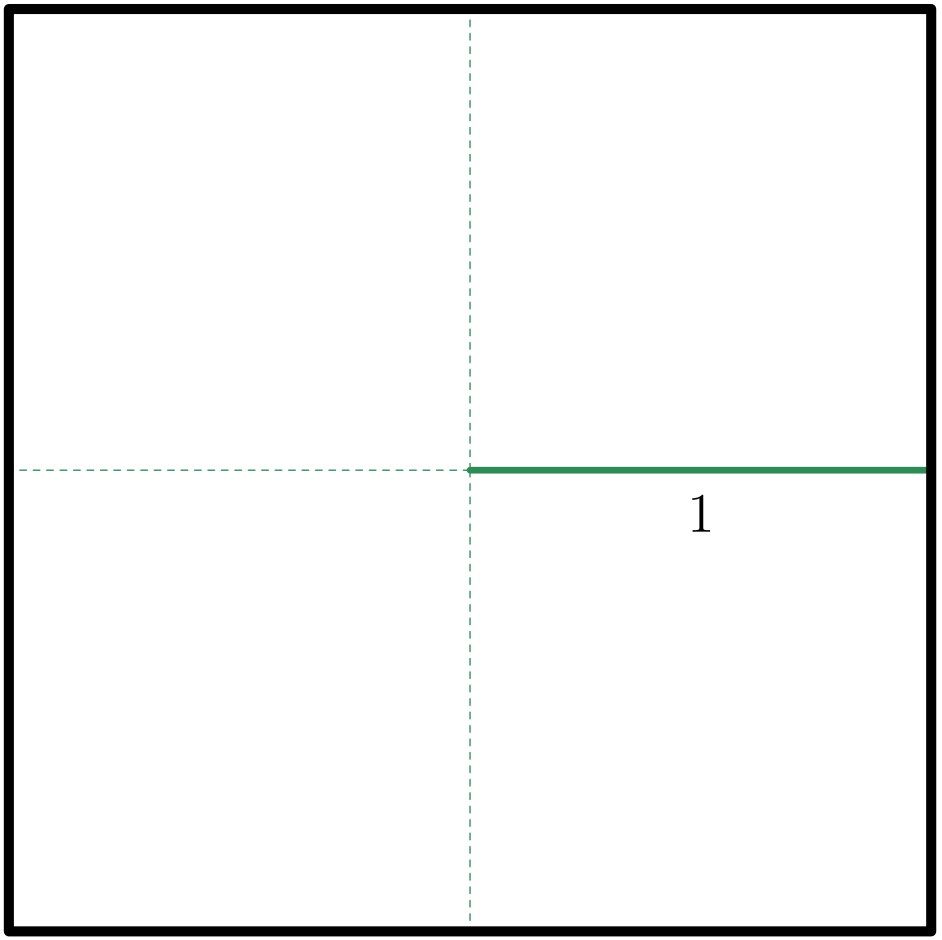
The number

1

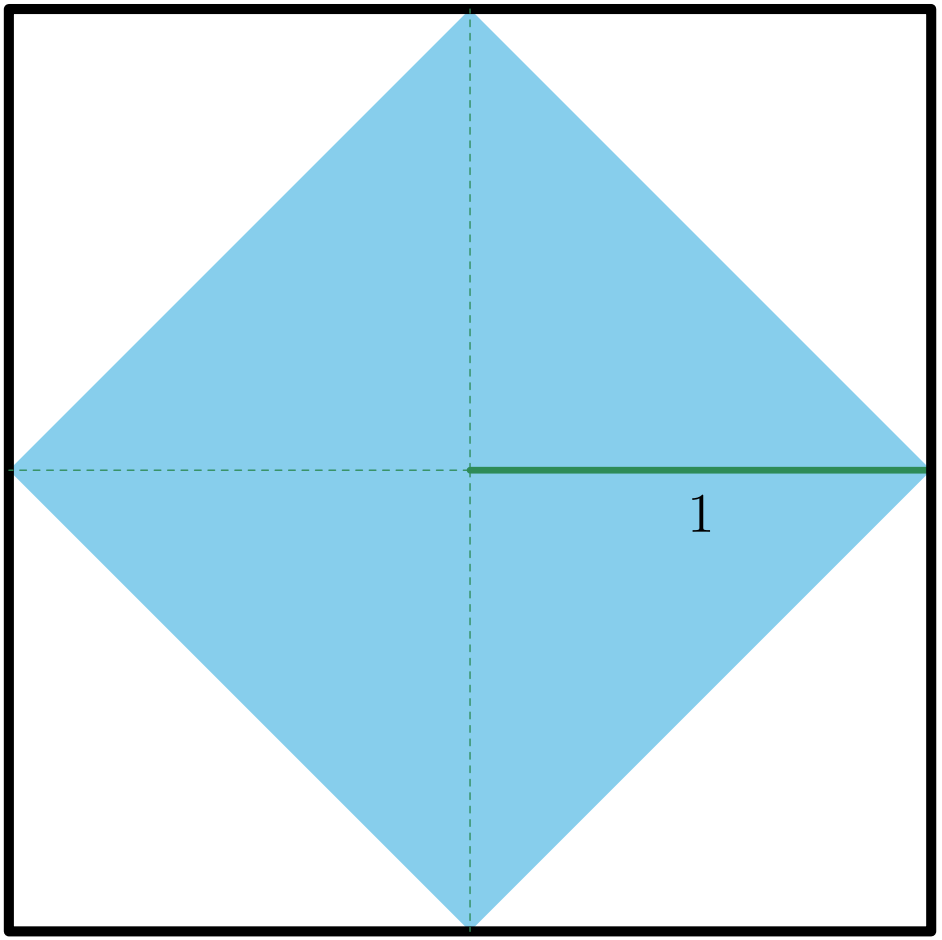
represented
as an area.



Which number
is represented
by the white area?



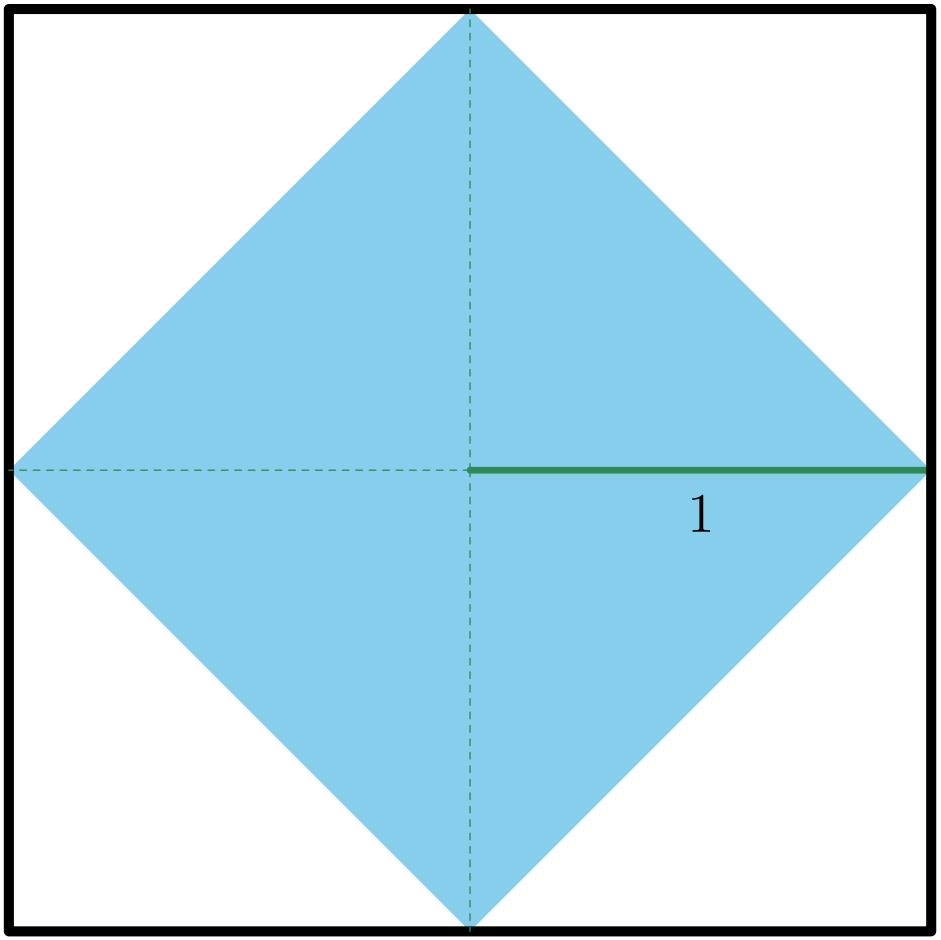
Which number is represented by the sky blue area?



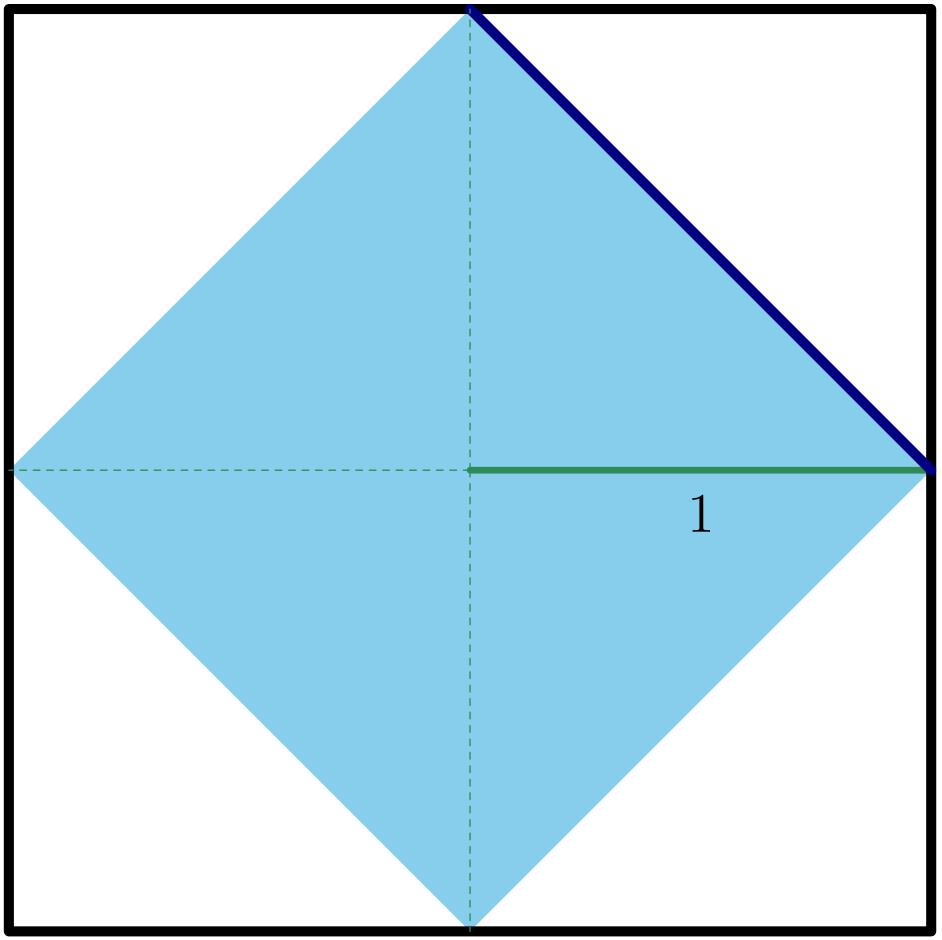
The number

2

is sky blue.



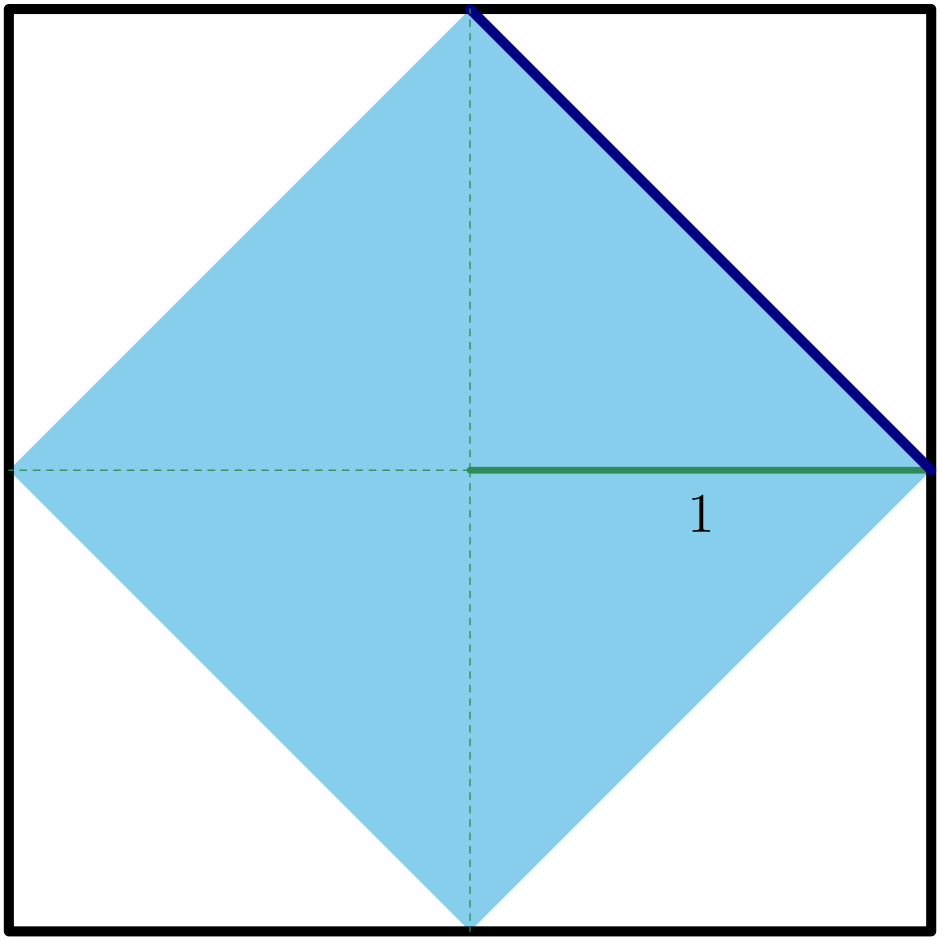
Which number is navy blue?



The number

$$\sqrt{2}$$

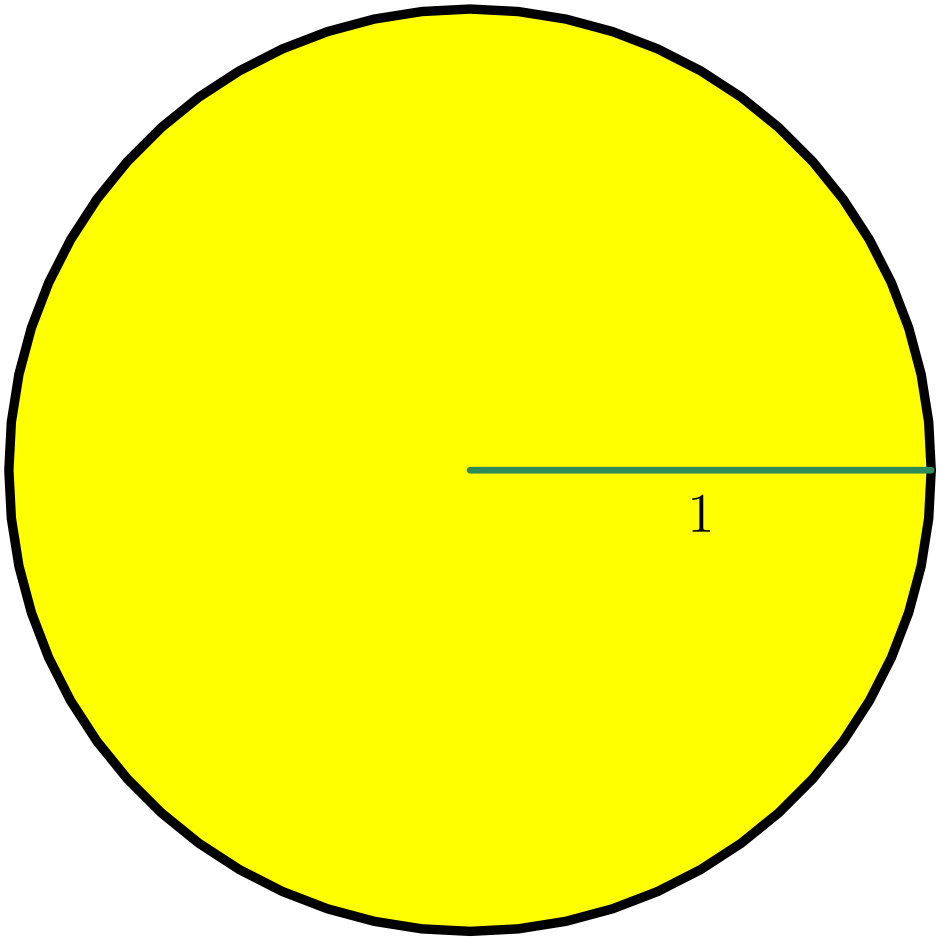
is navy blue.



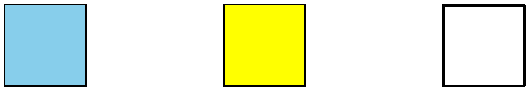
The number

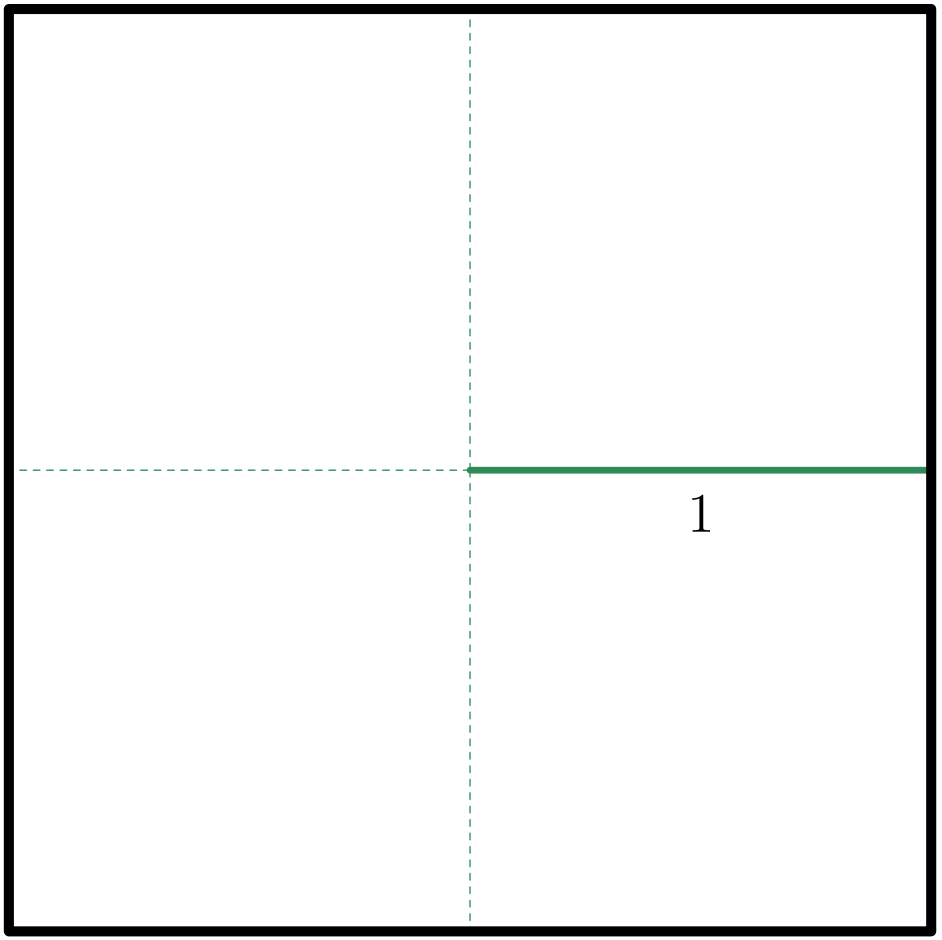
π

represented
as an area.

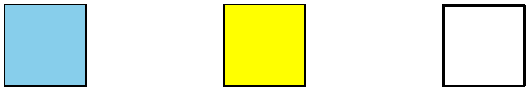


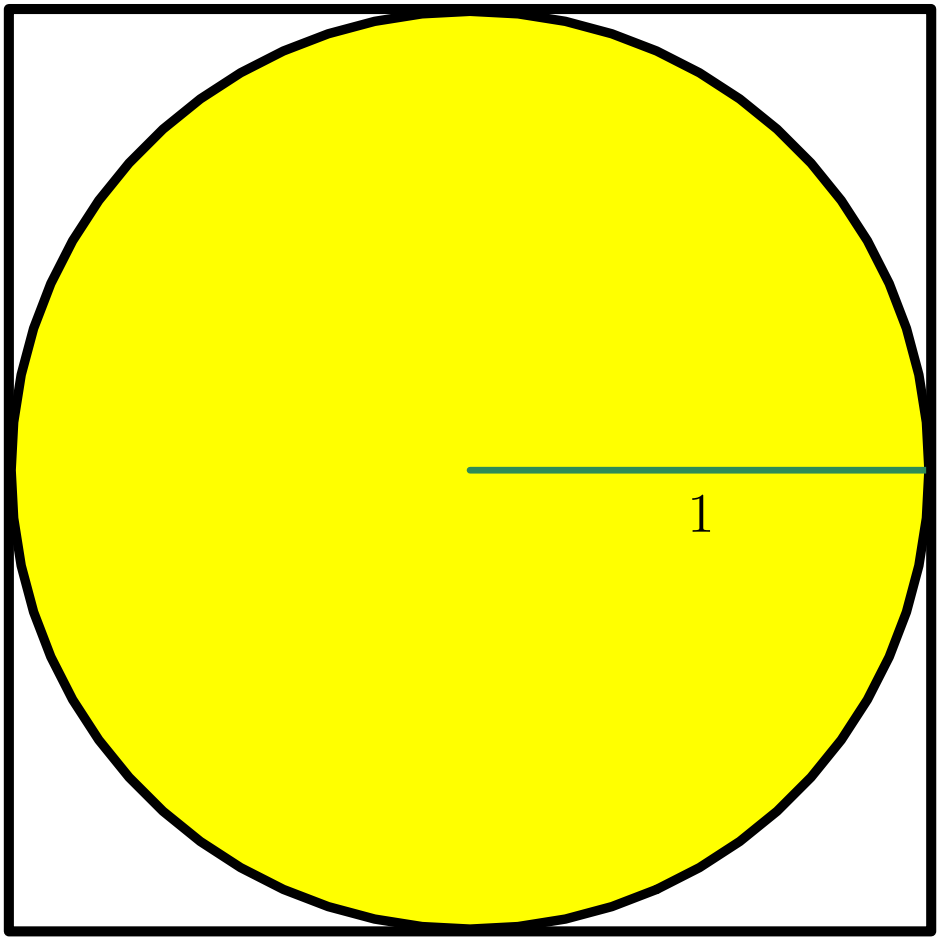
Compare the areas:



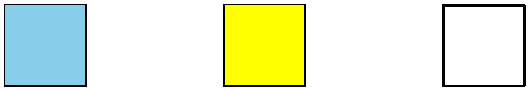


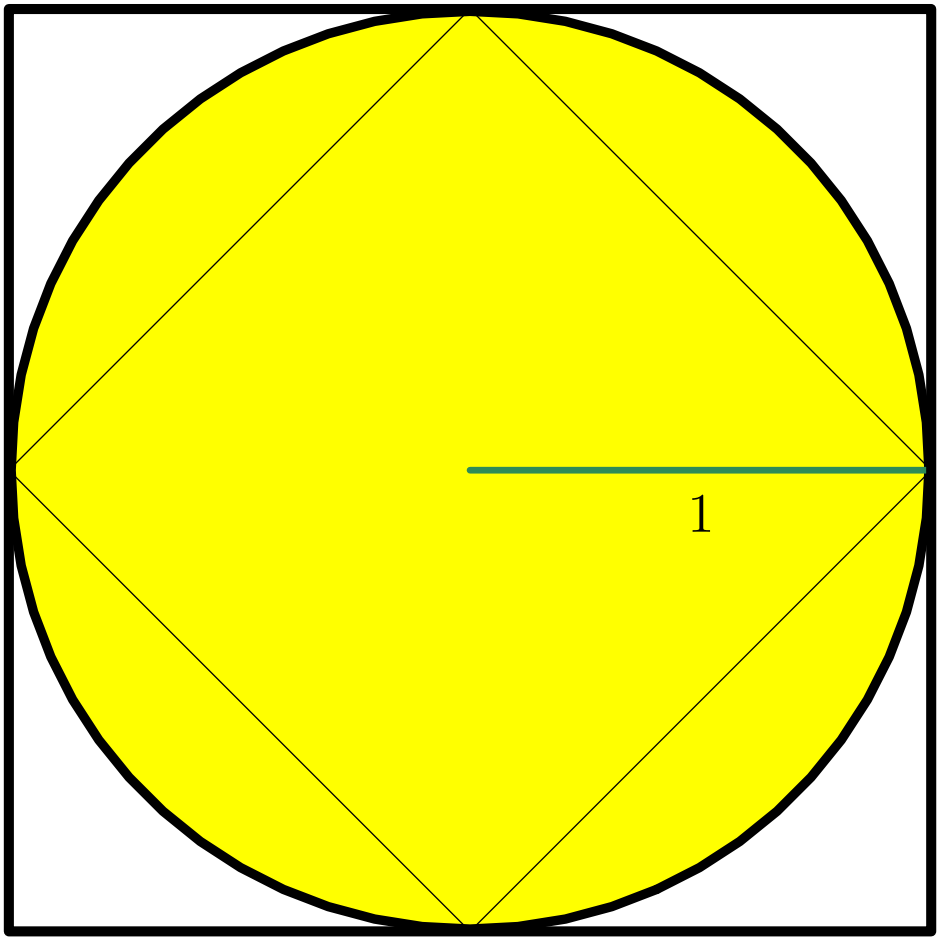
Compare the areas:



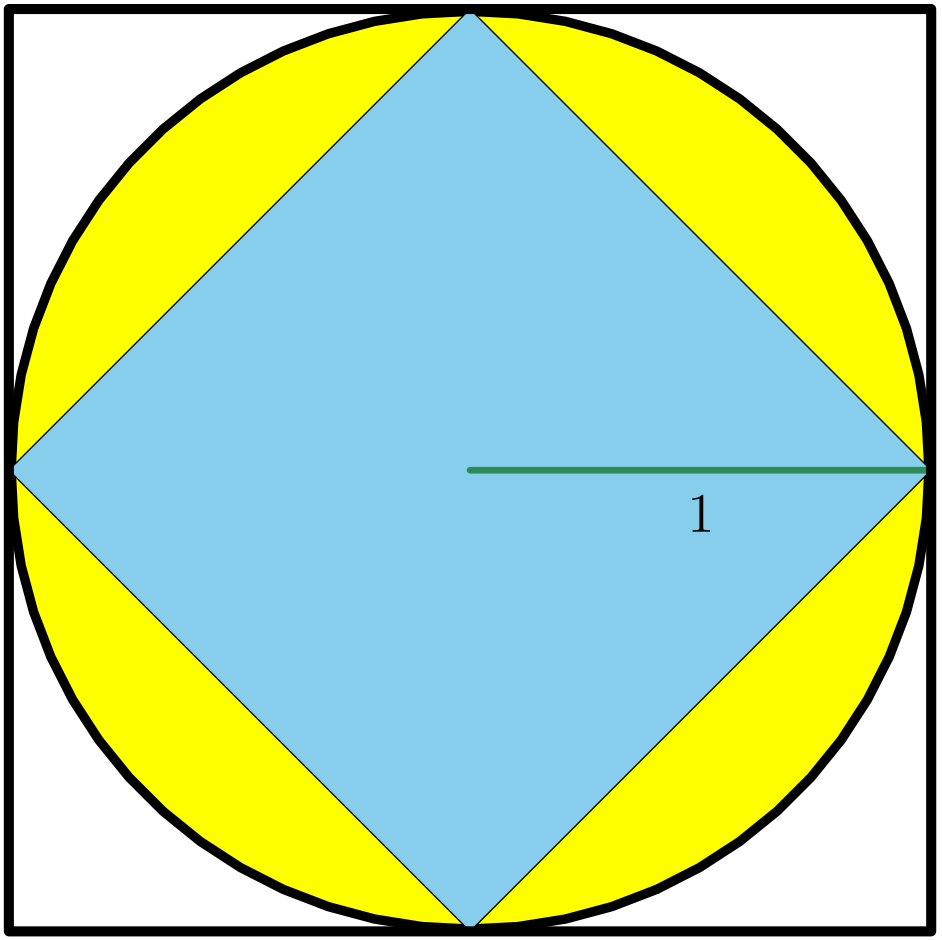


Compare the areas:

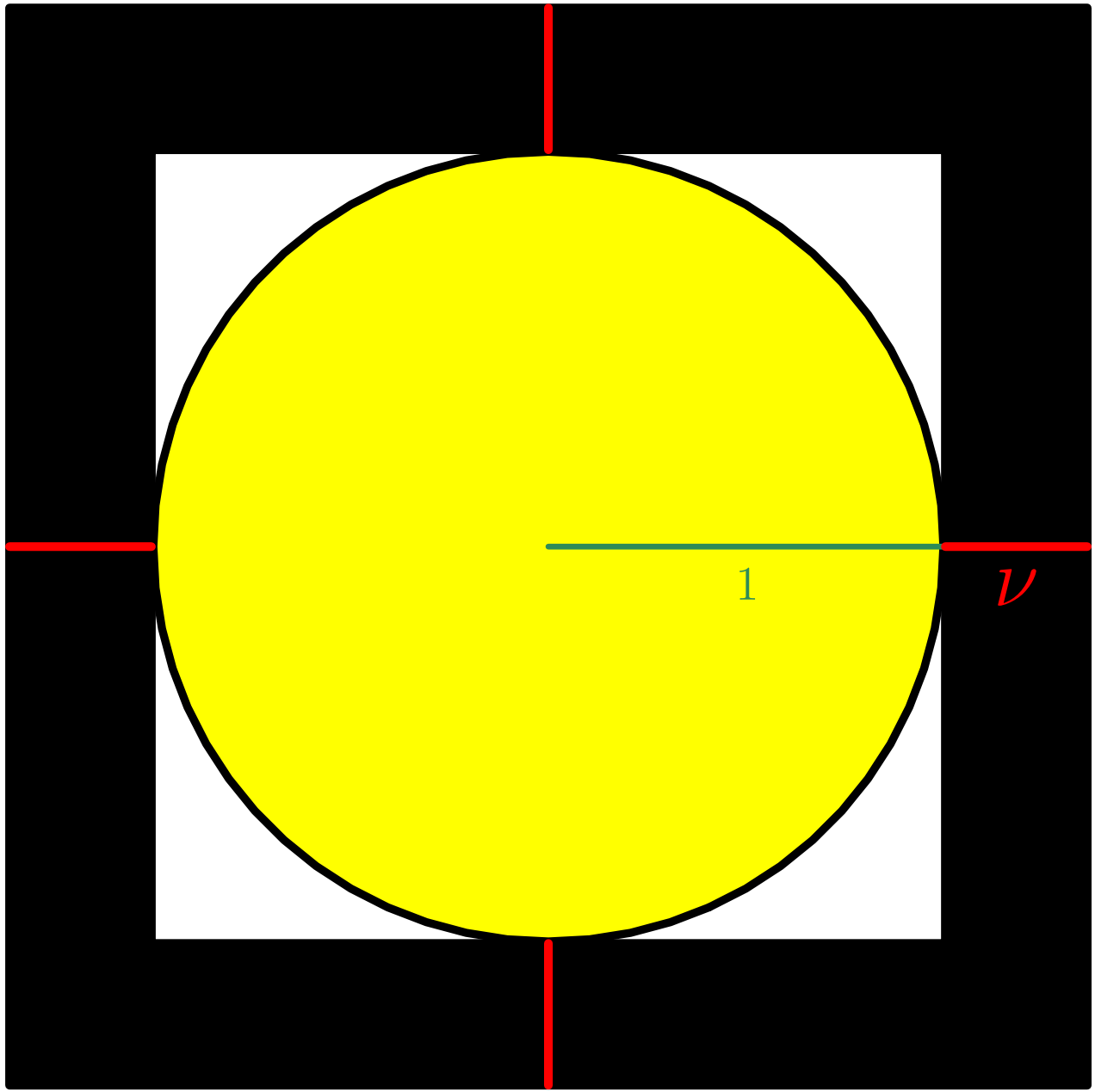


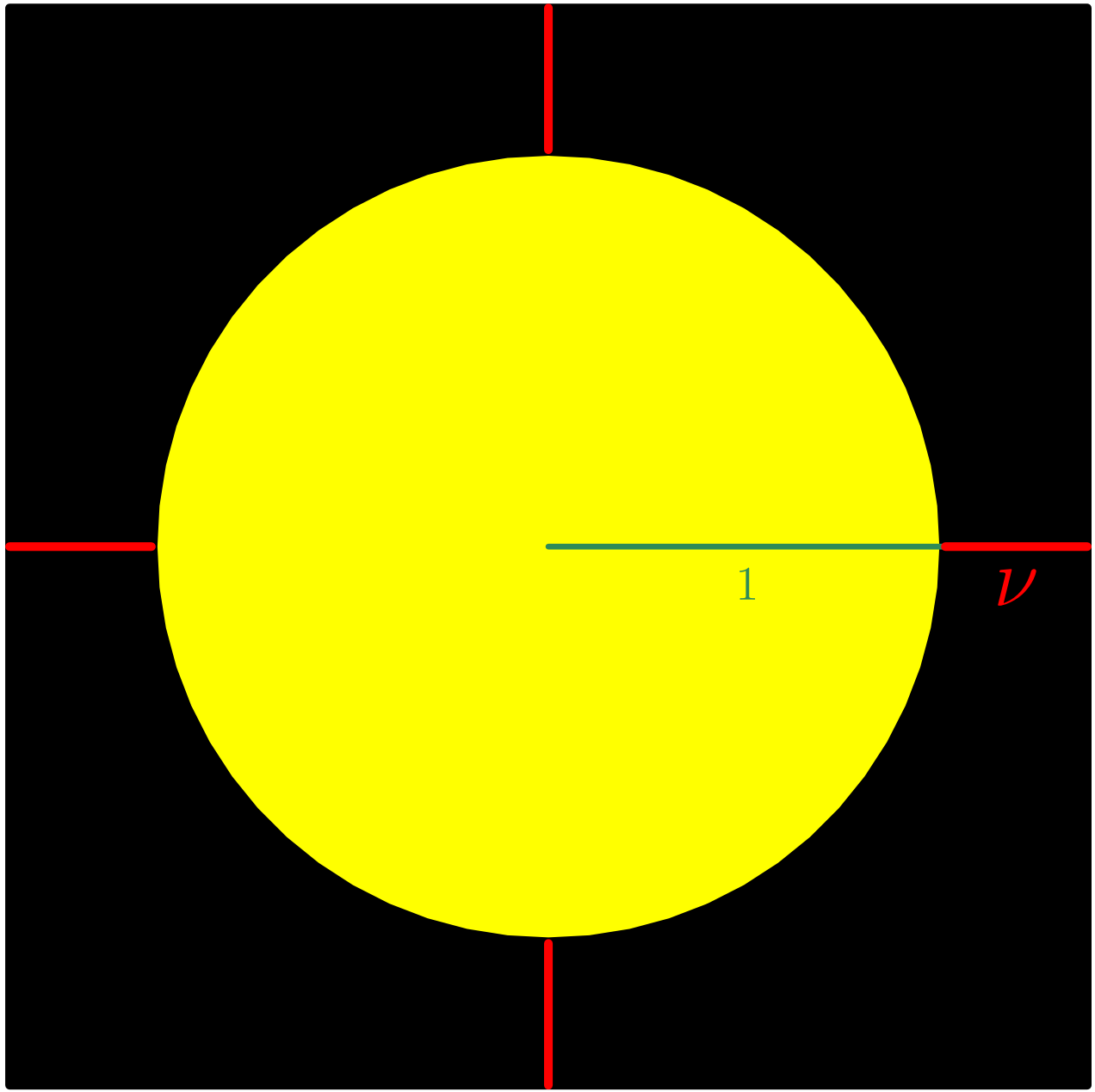


$$2 < \pi < 4$$



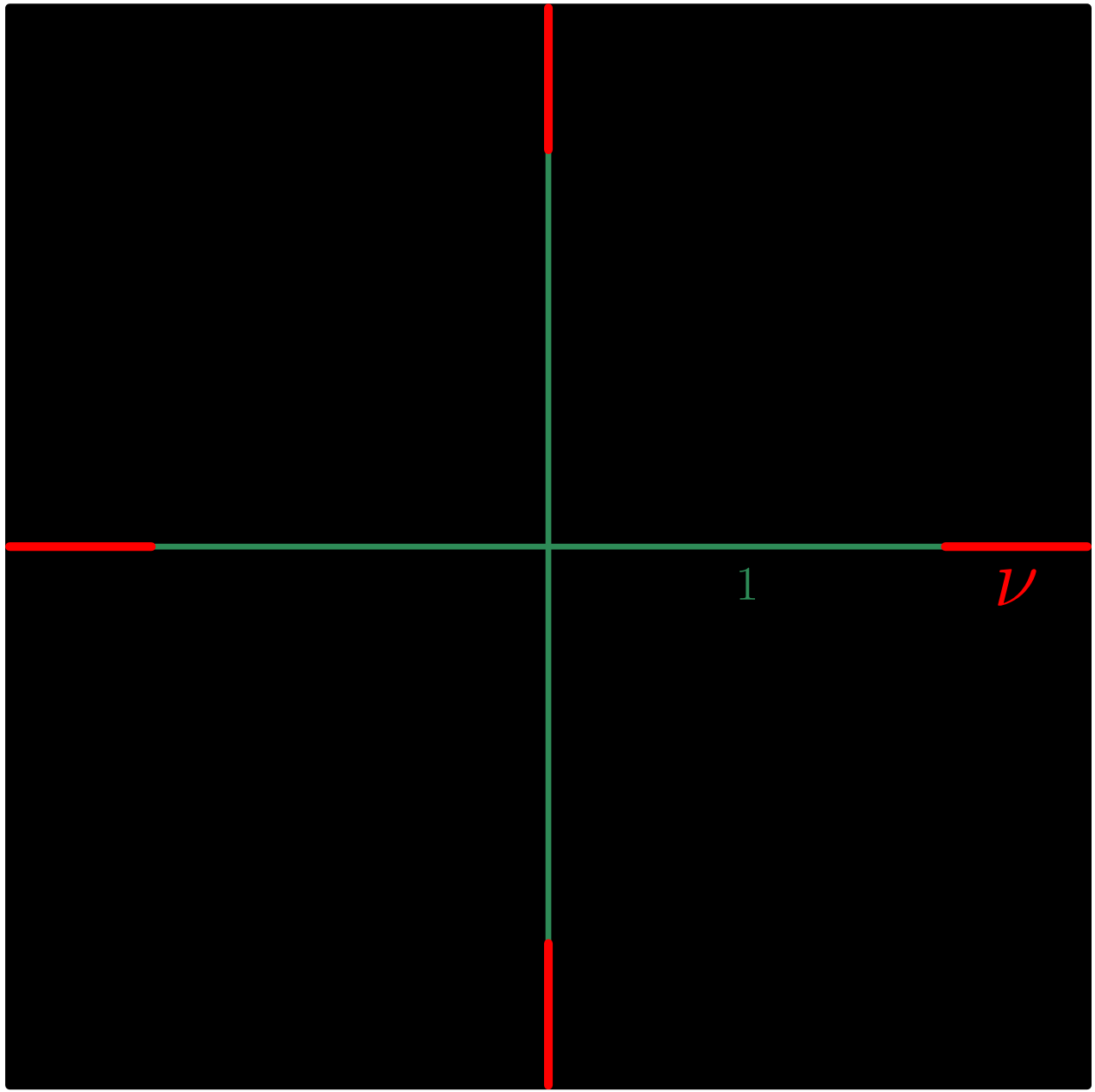
$\nu \approx 0.357196$




1
ν

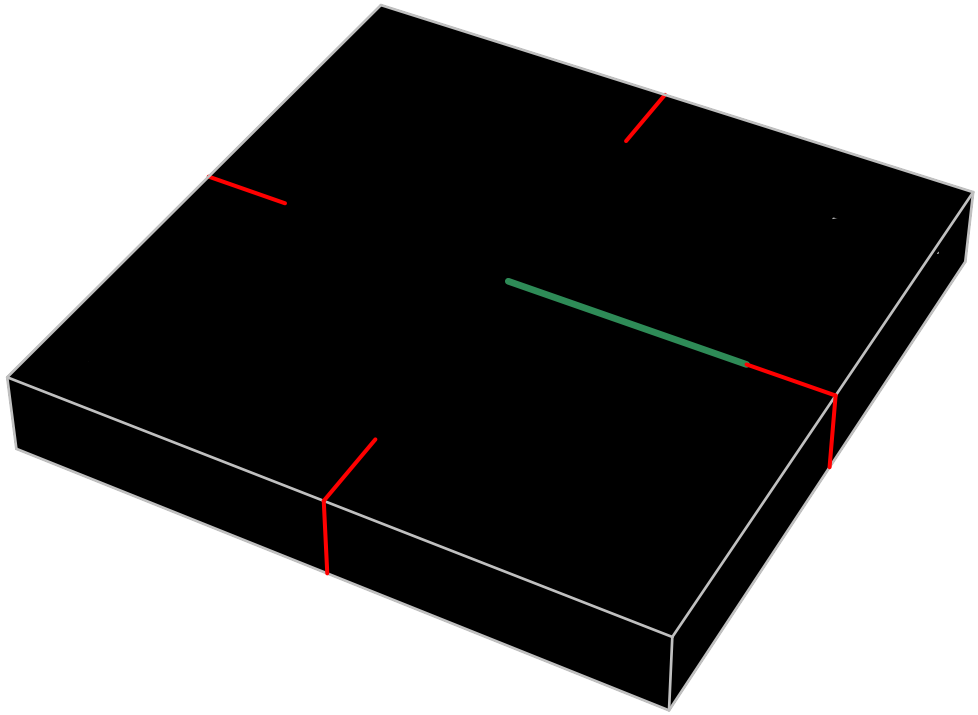
The area of the black square is

$$4\,(1+\nu)^2$$



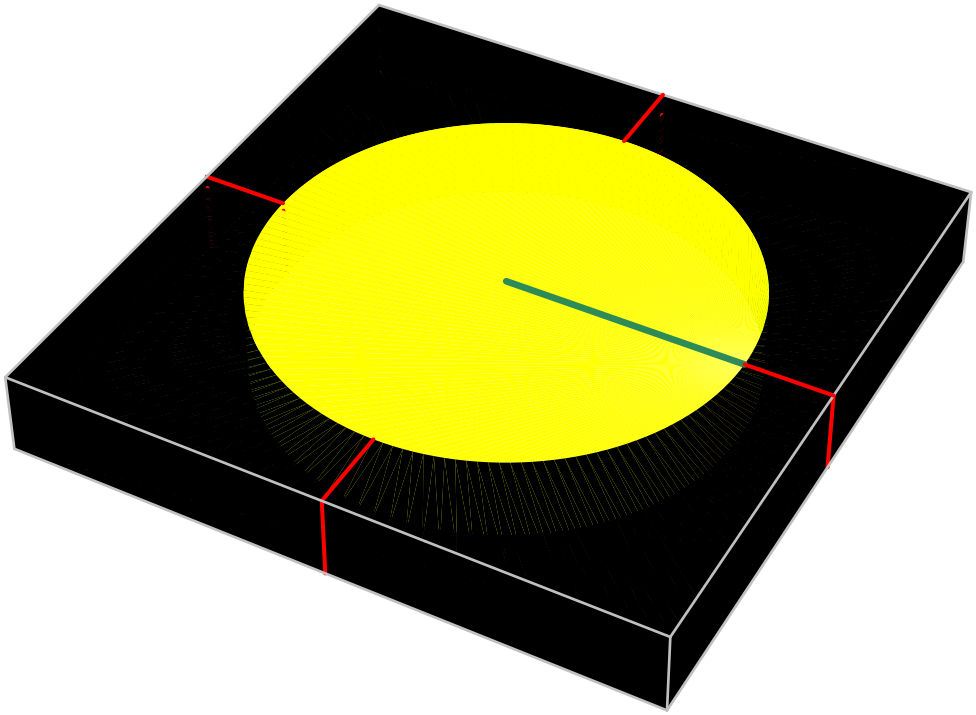
The volume of the black box is

$$4\,\nu\,(1+\nu)^2$$

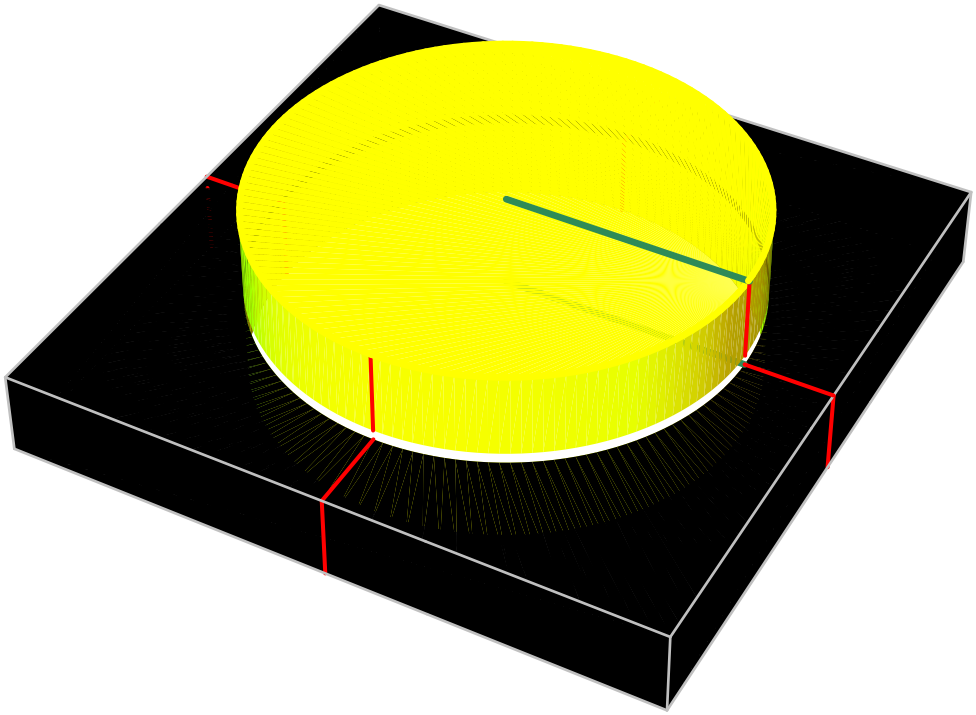


Now remove the
yellow cylinder.
Its volume is

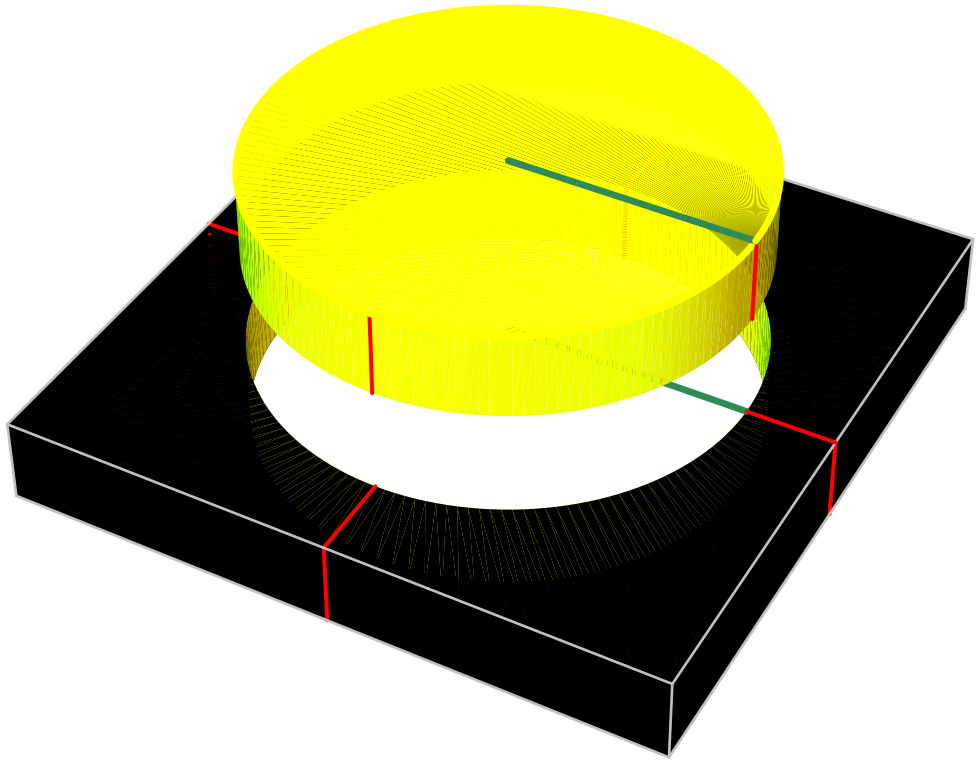
$$\nu\pi$$



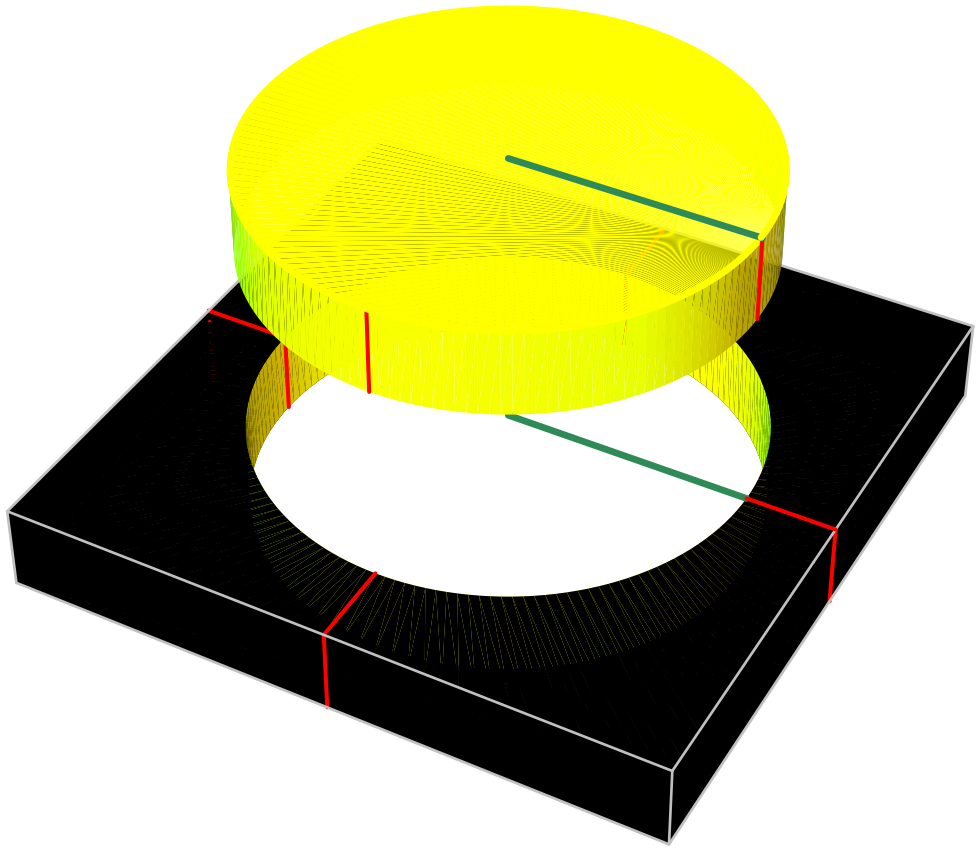
Removing the
yellow cylinder.



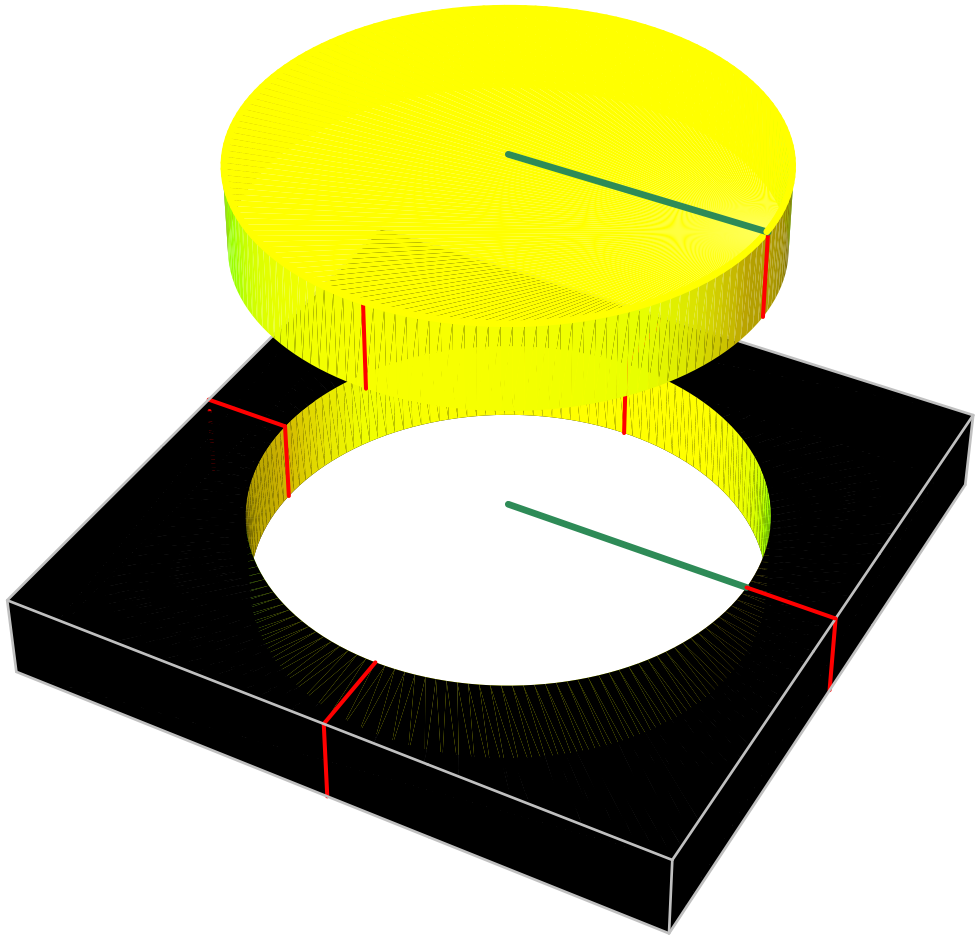
Removing the
yellow cylinder.



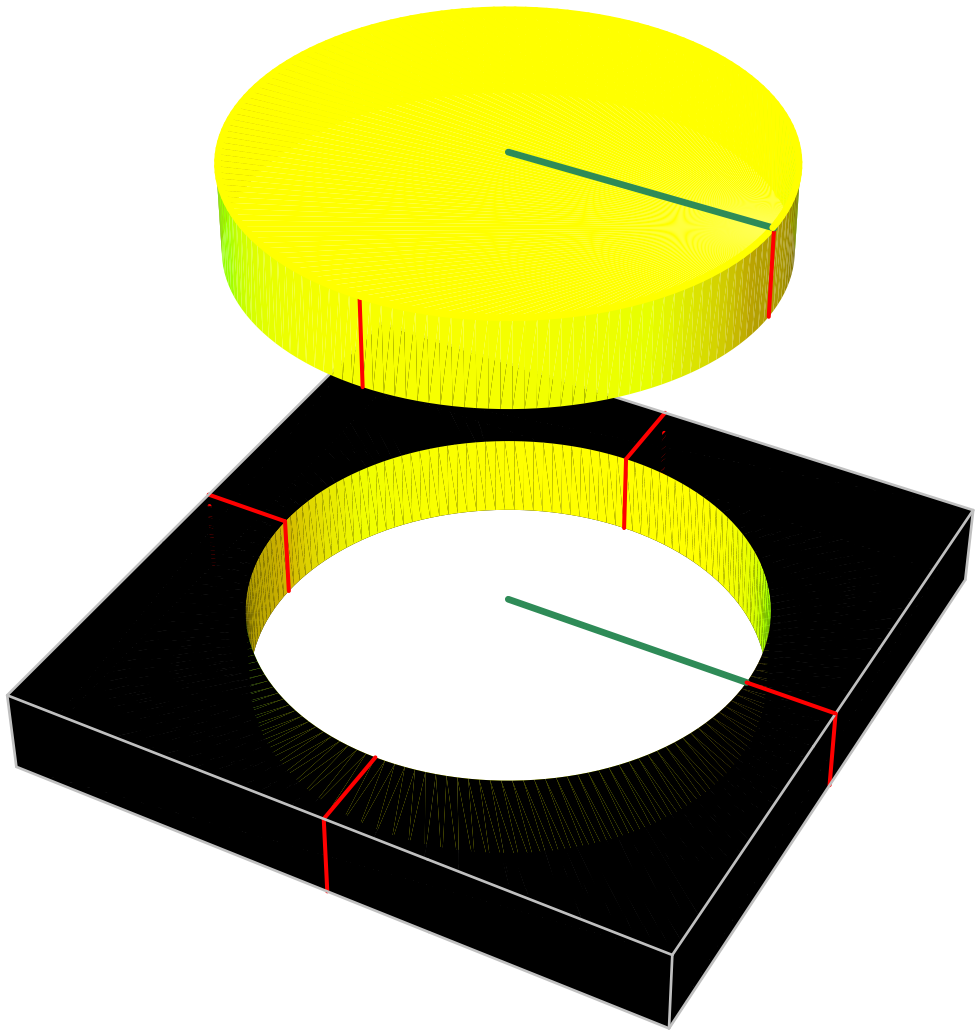
Removing the
yellow cylinder.



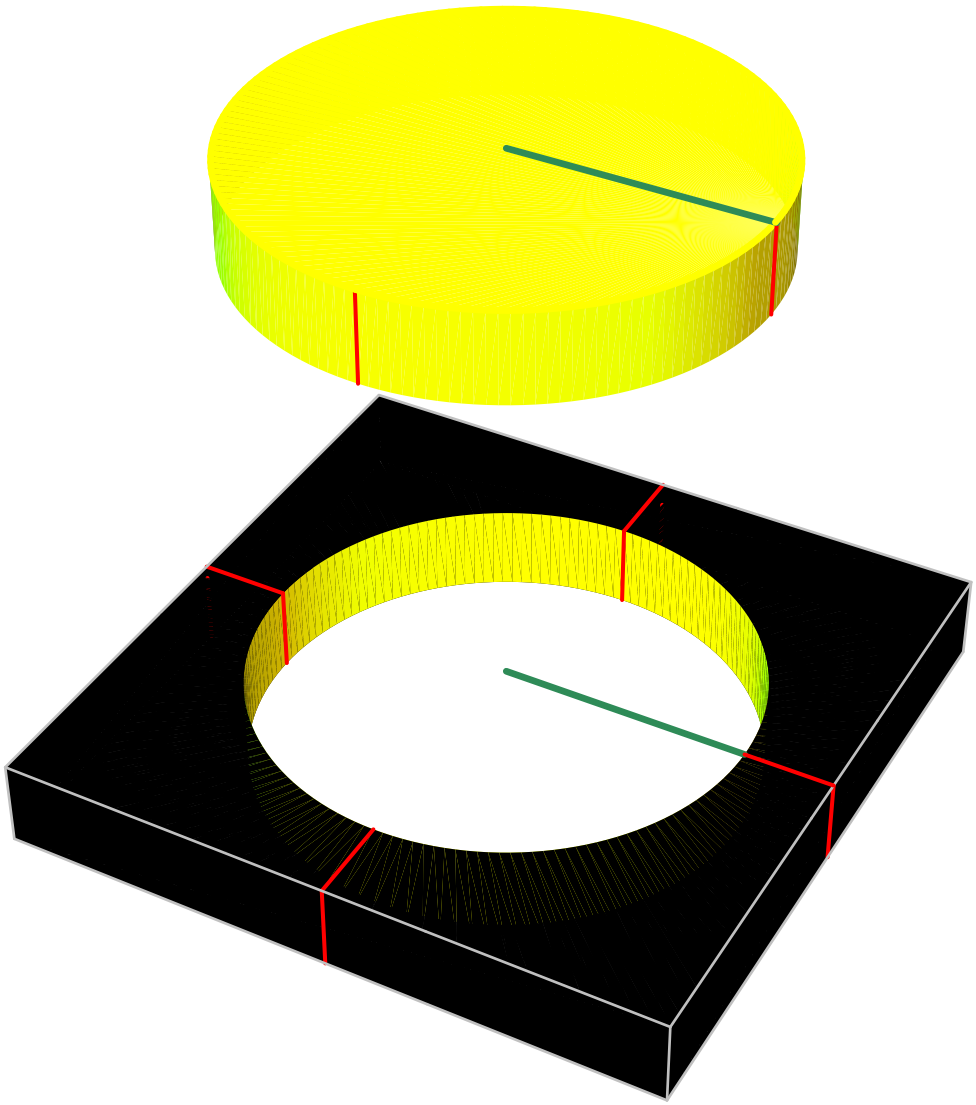
Removing the
yellow cylinder.



Removing the
yellow cylinder.

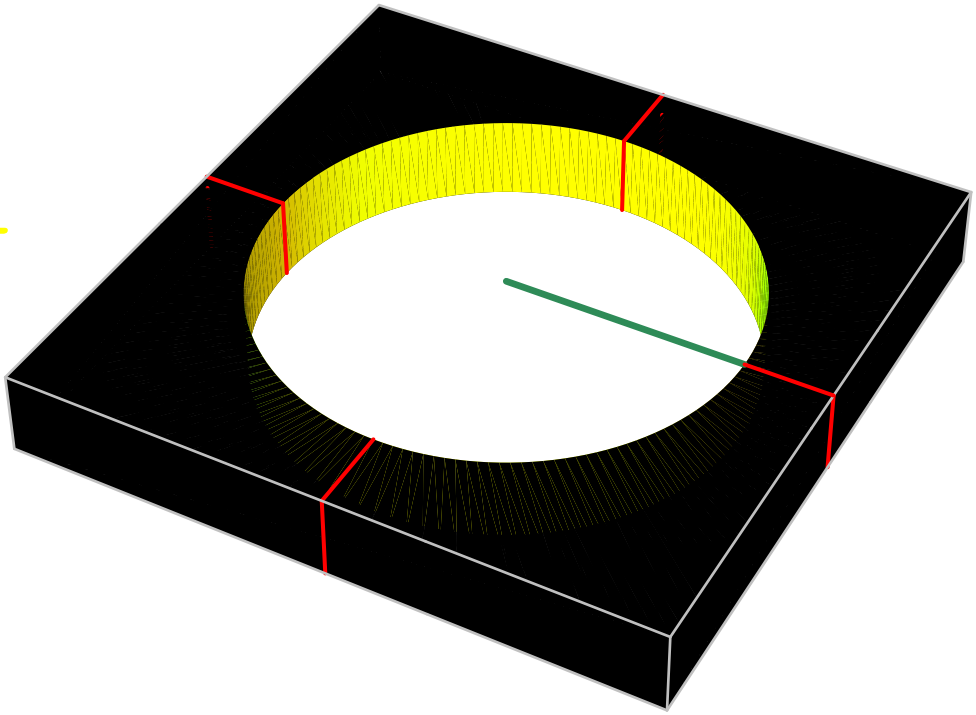


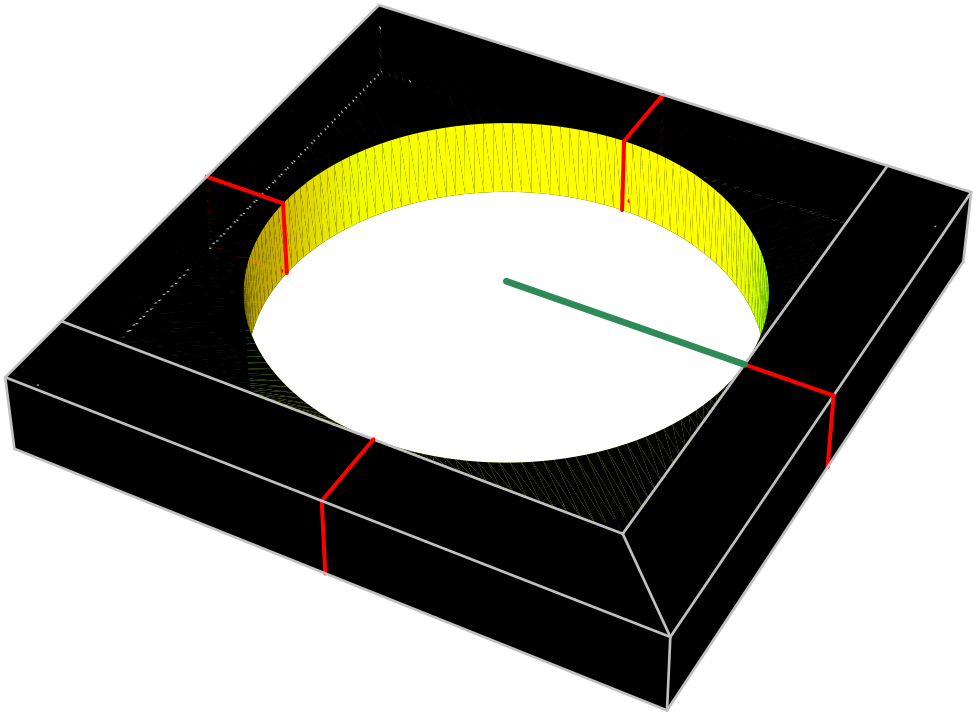
Removing the
yellow cylinder.

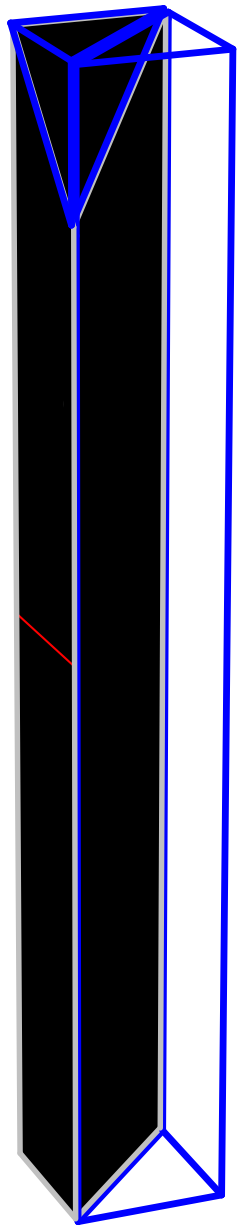


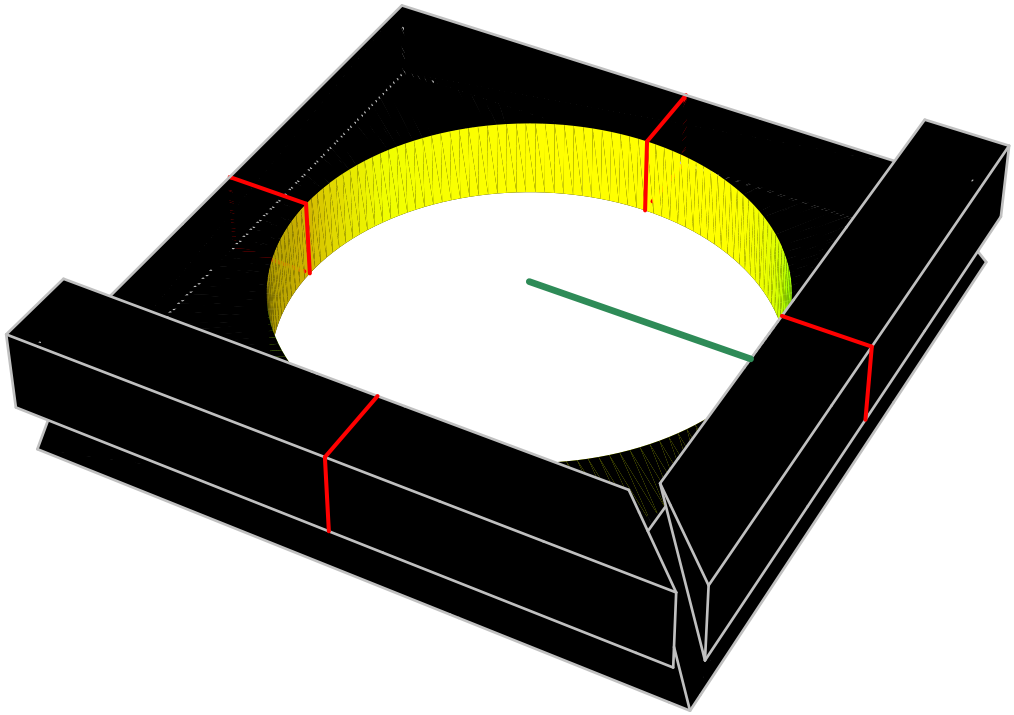
The remaining volume is

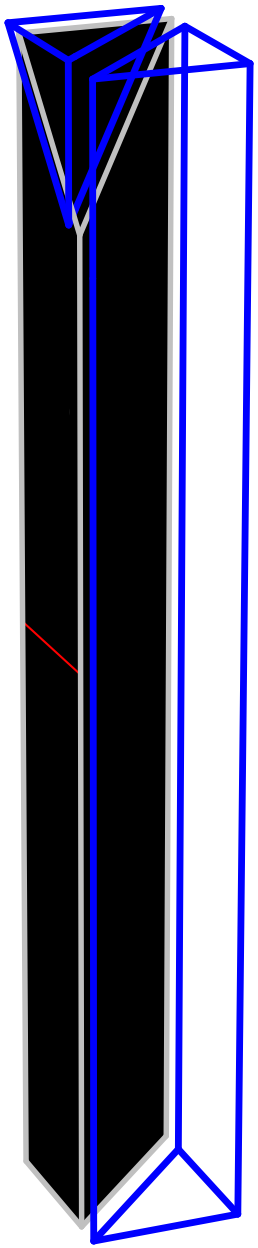
$$4\,\nu\,(1+\nu)^2 - \nu\pi$$

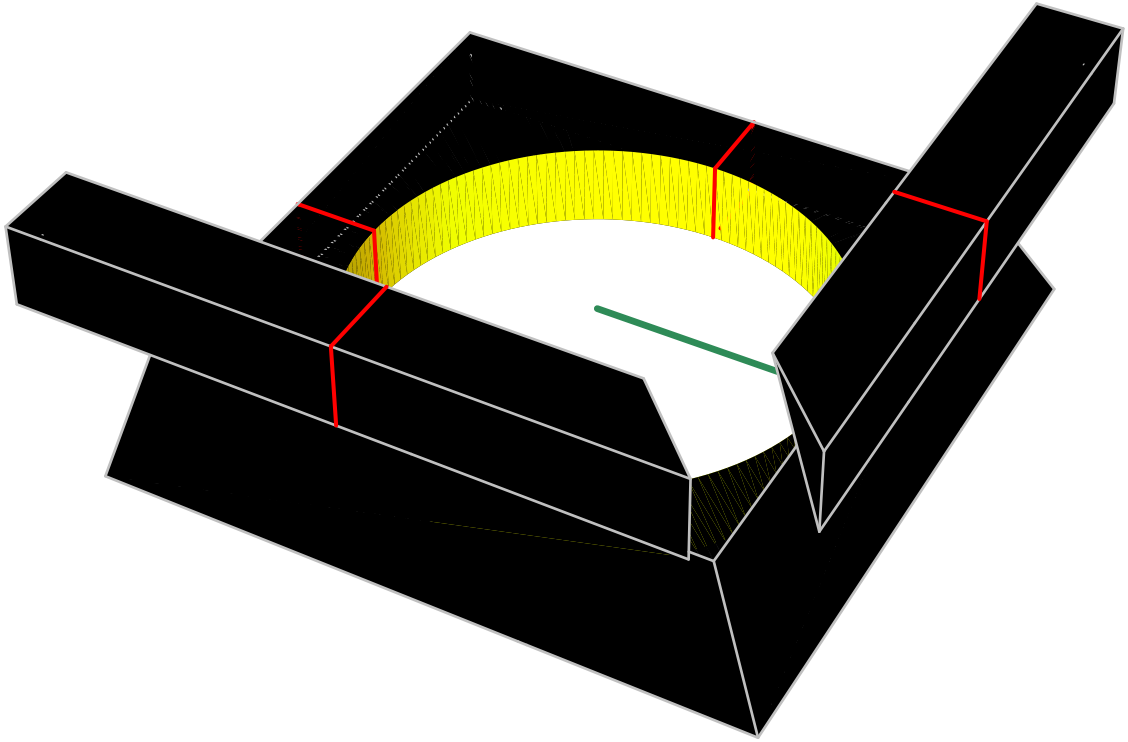


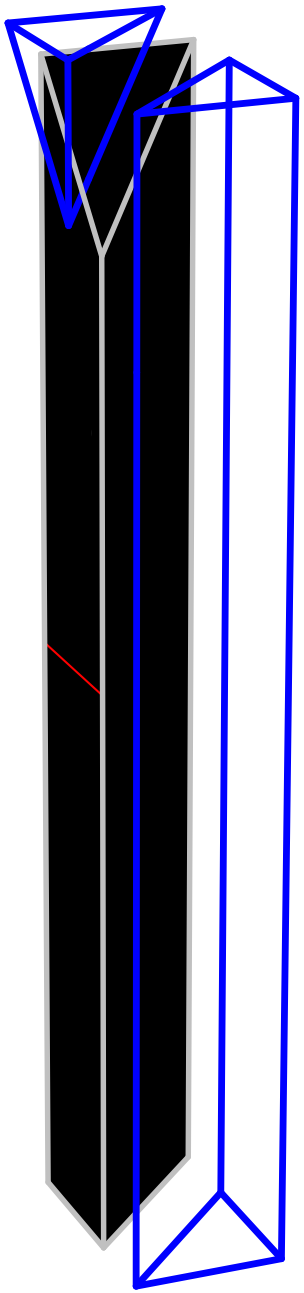


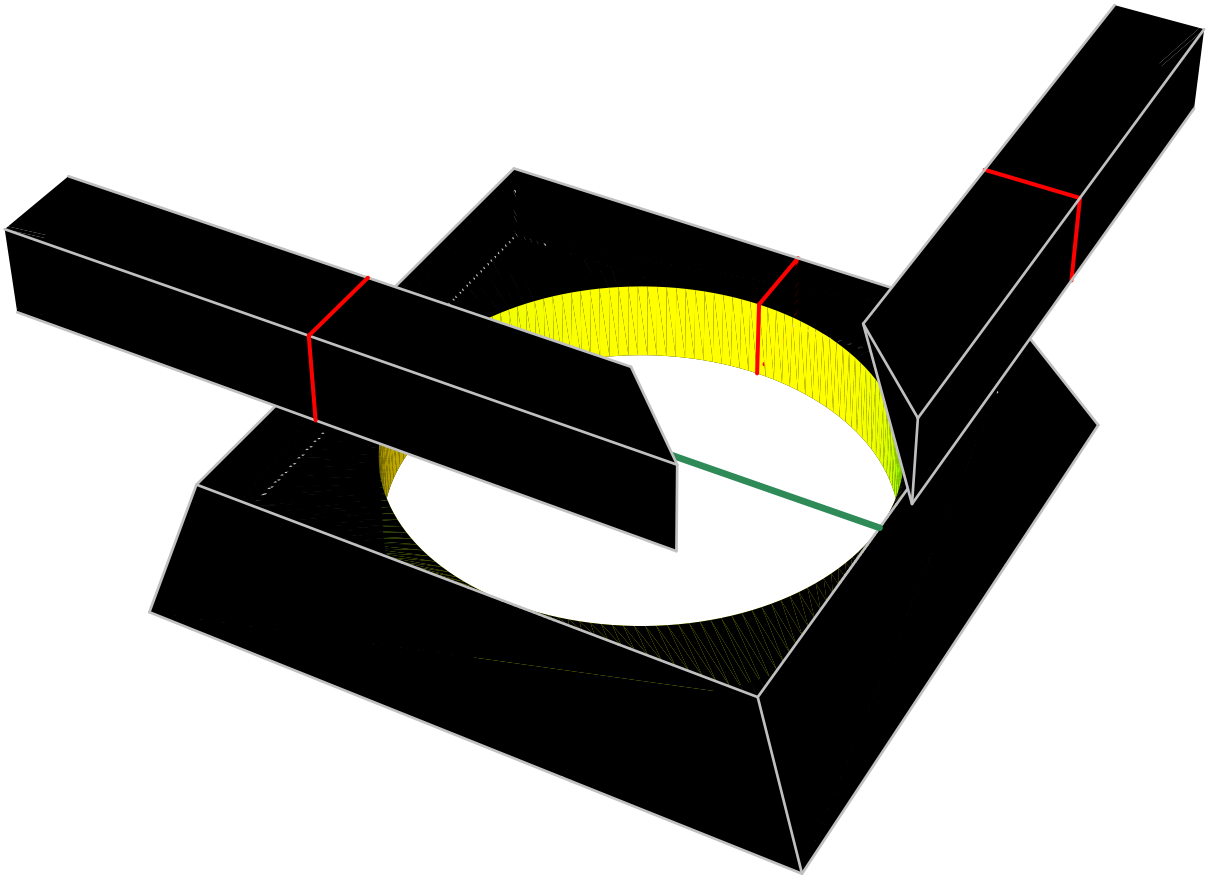


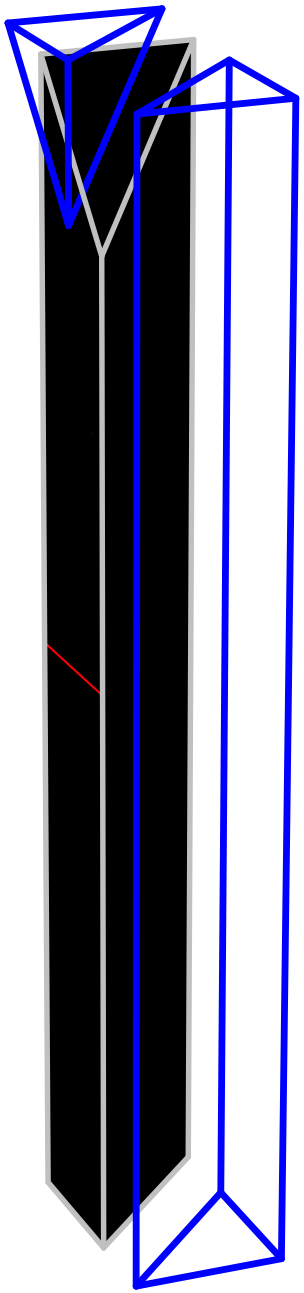


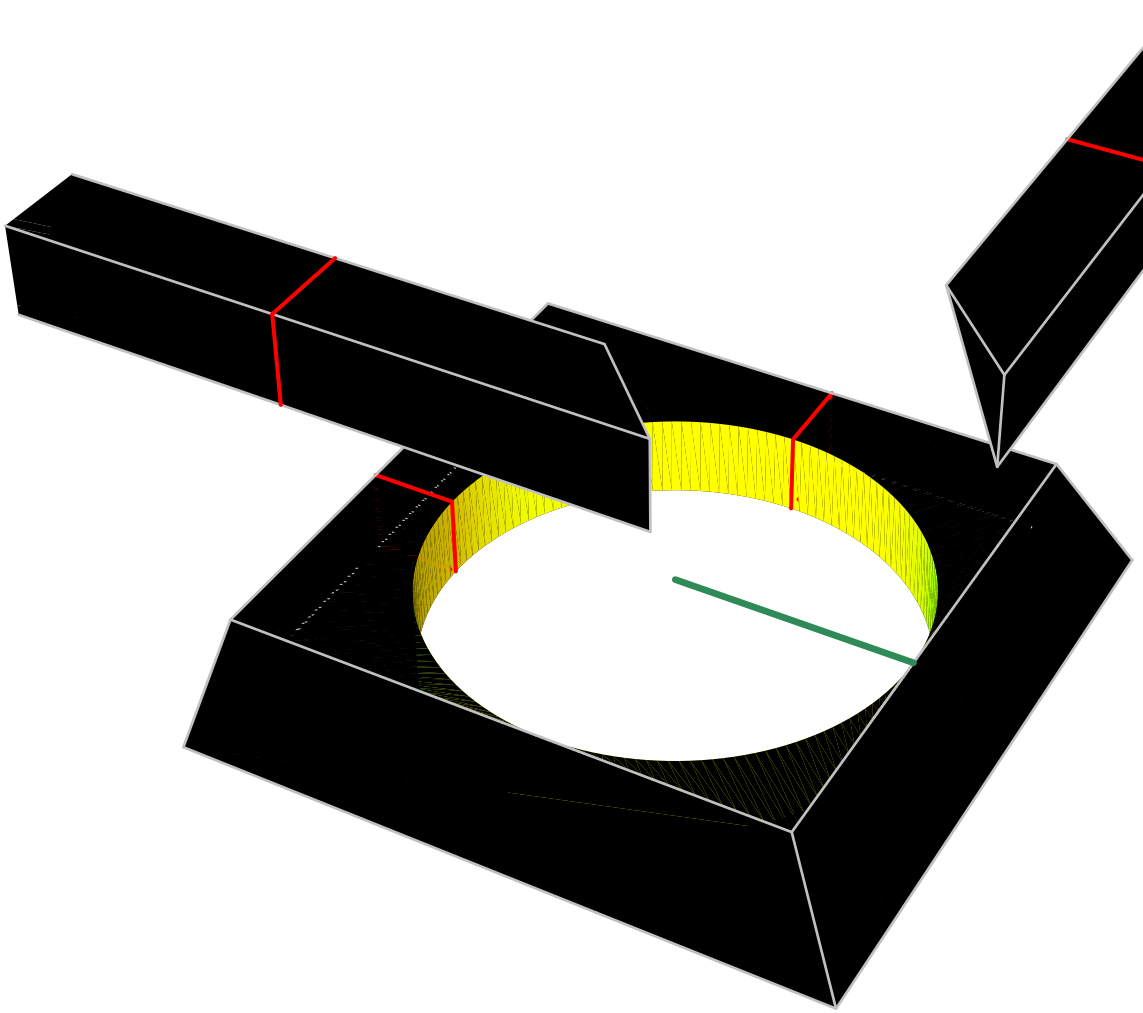




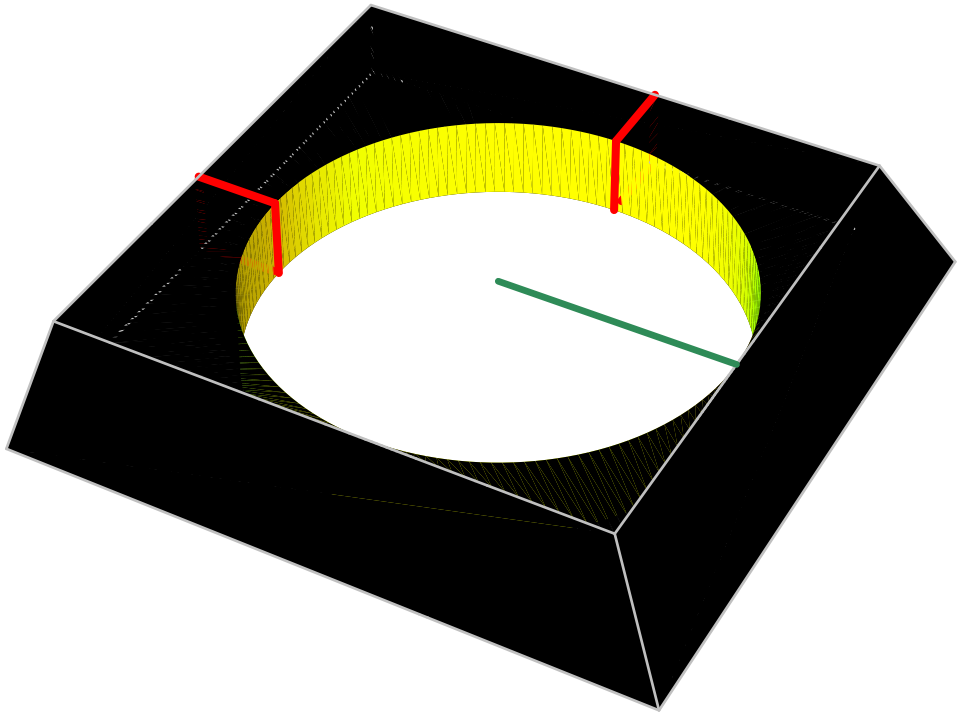




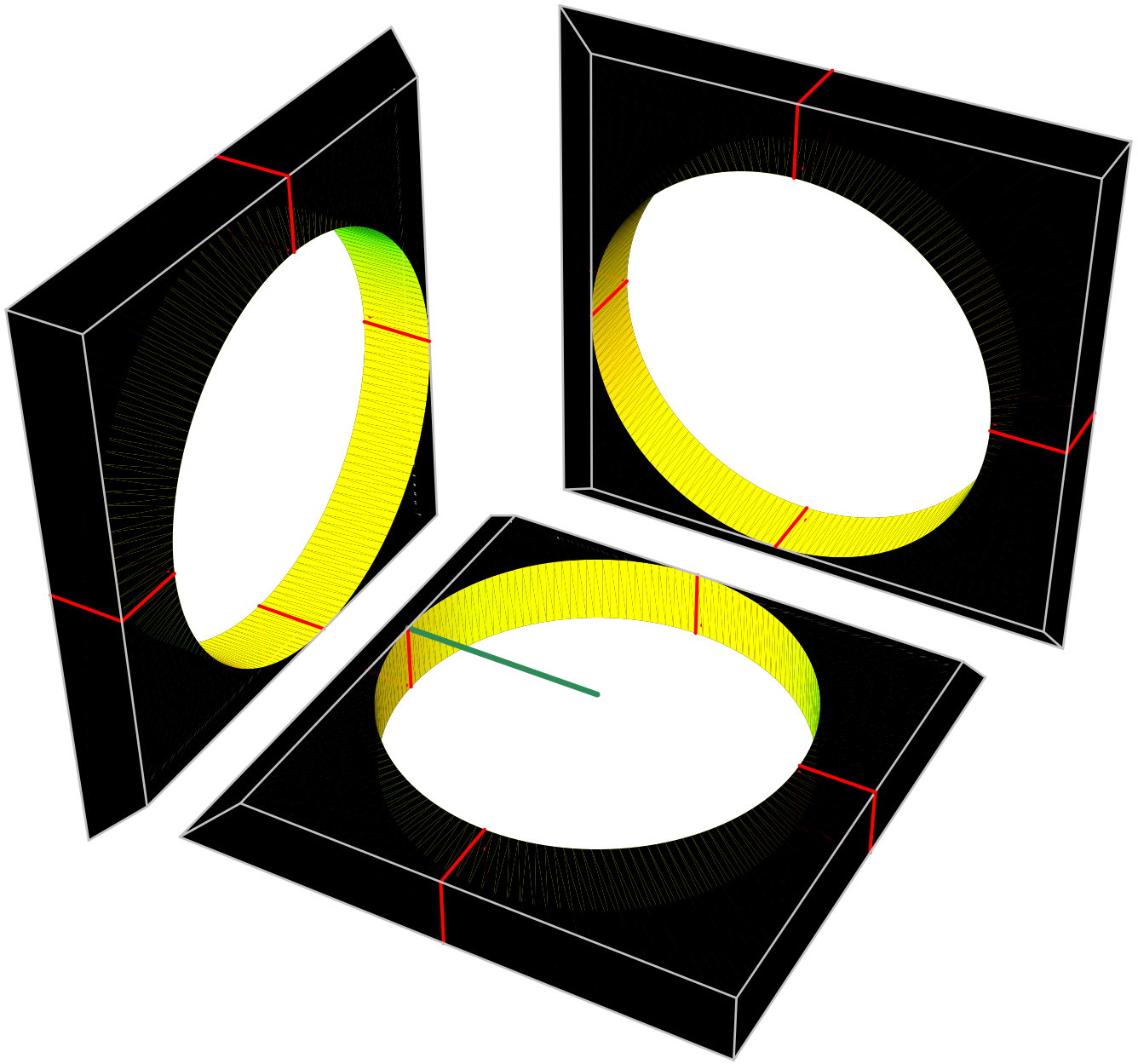




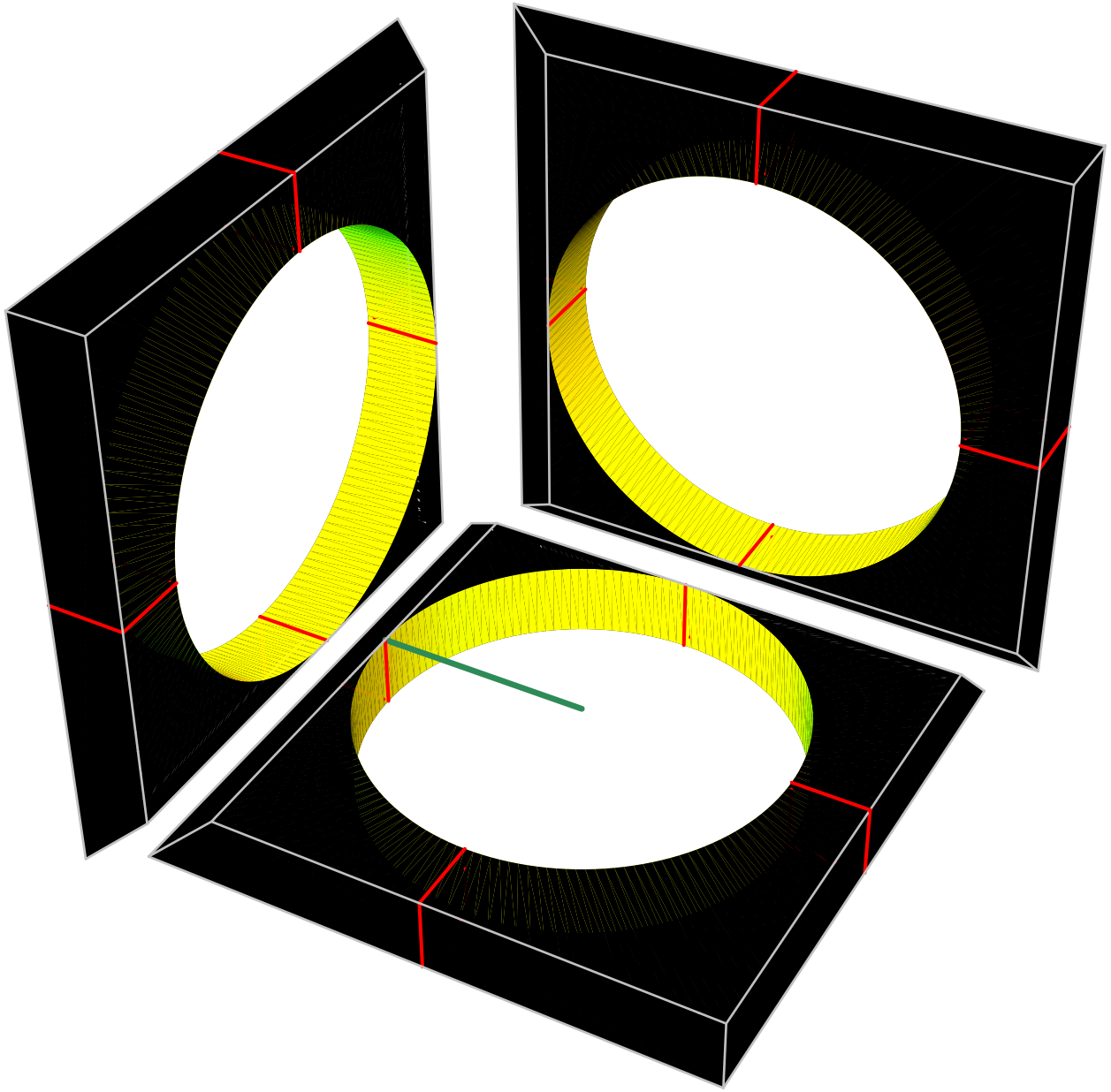
This is the first
building block for the
Skyviewing sculpture



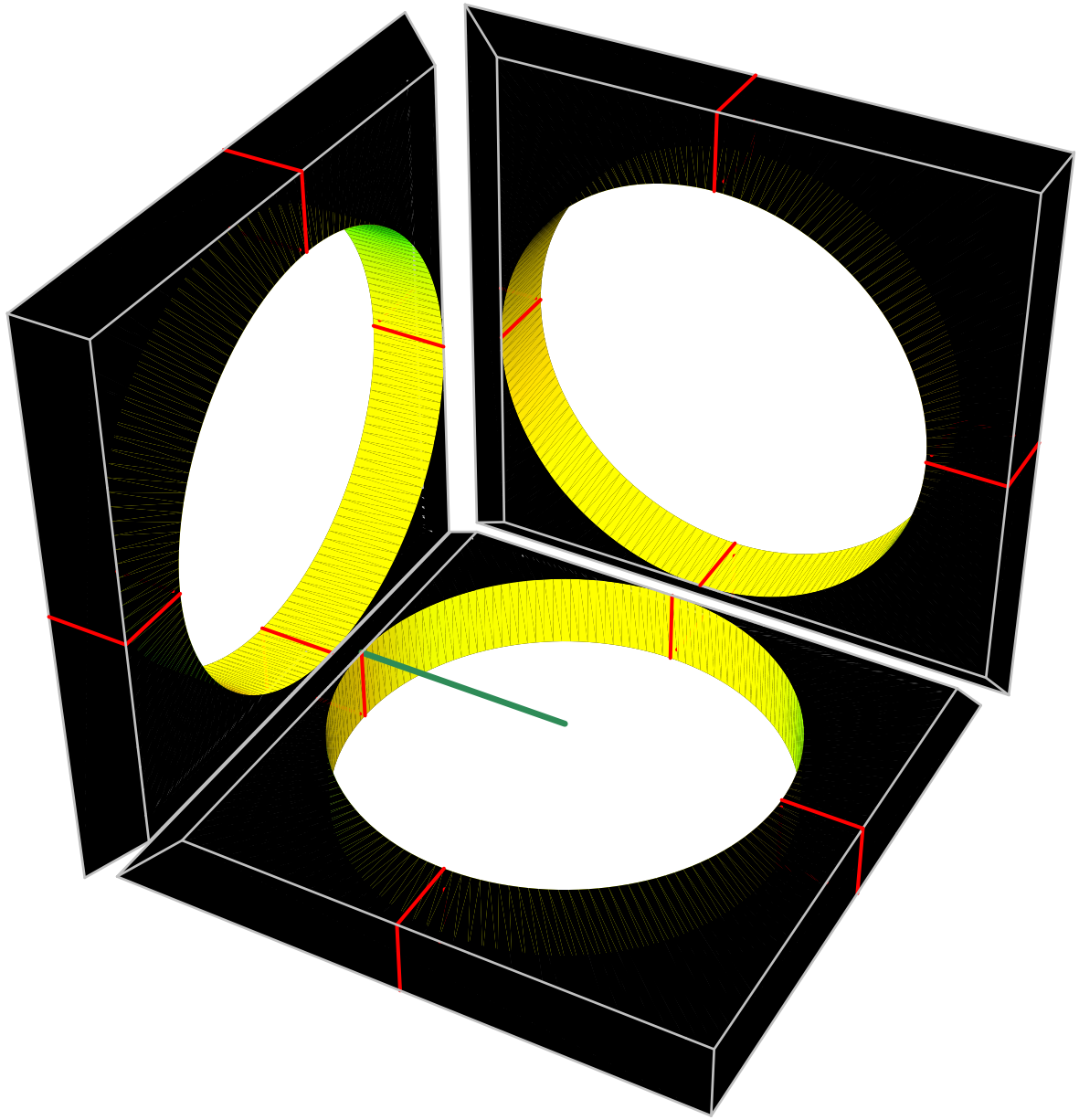
We need three
such pieces.



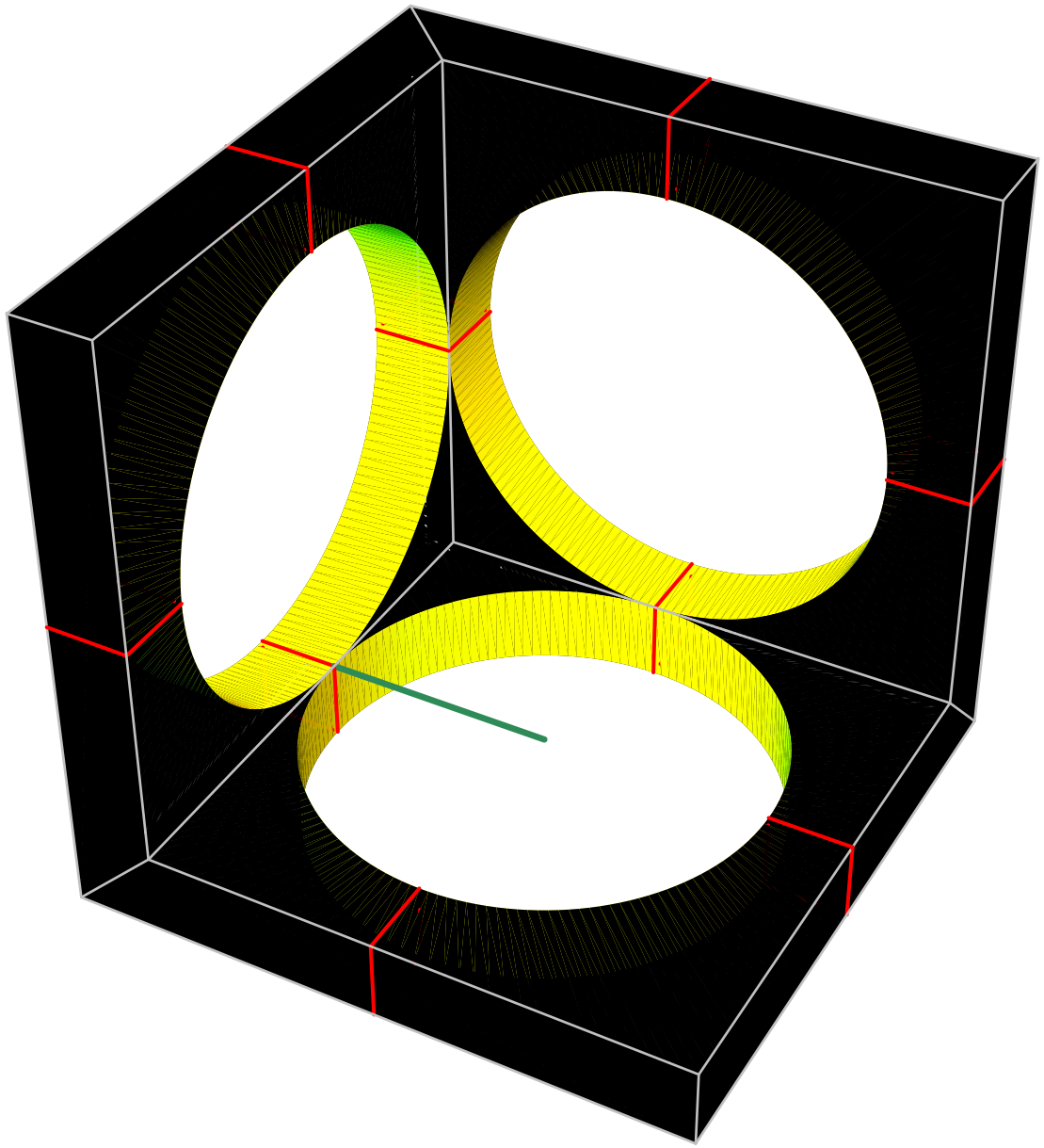
Now we put them together.



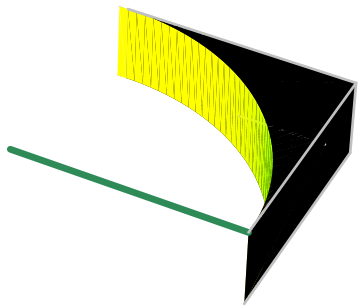
Closer!



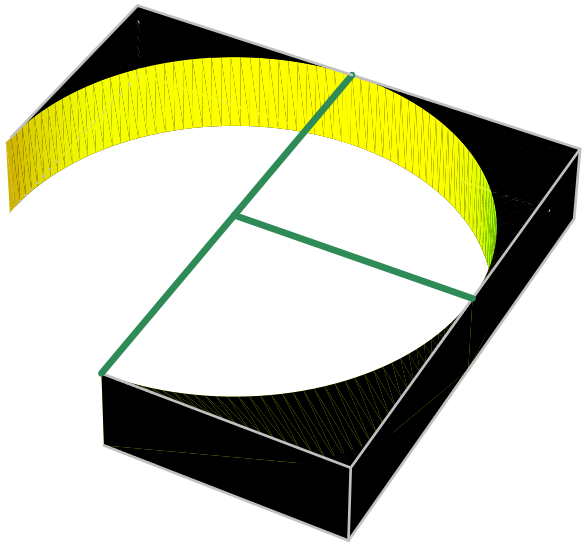
Several small pieces
are missing.



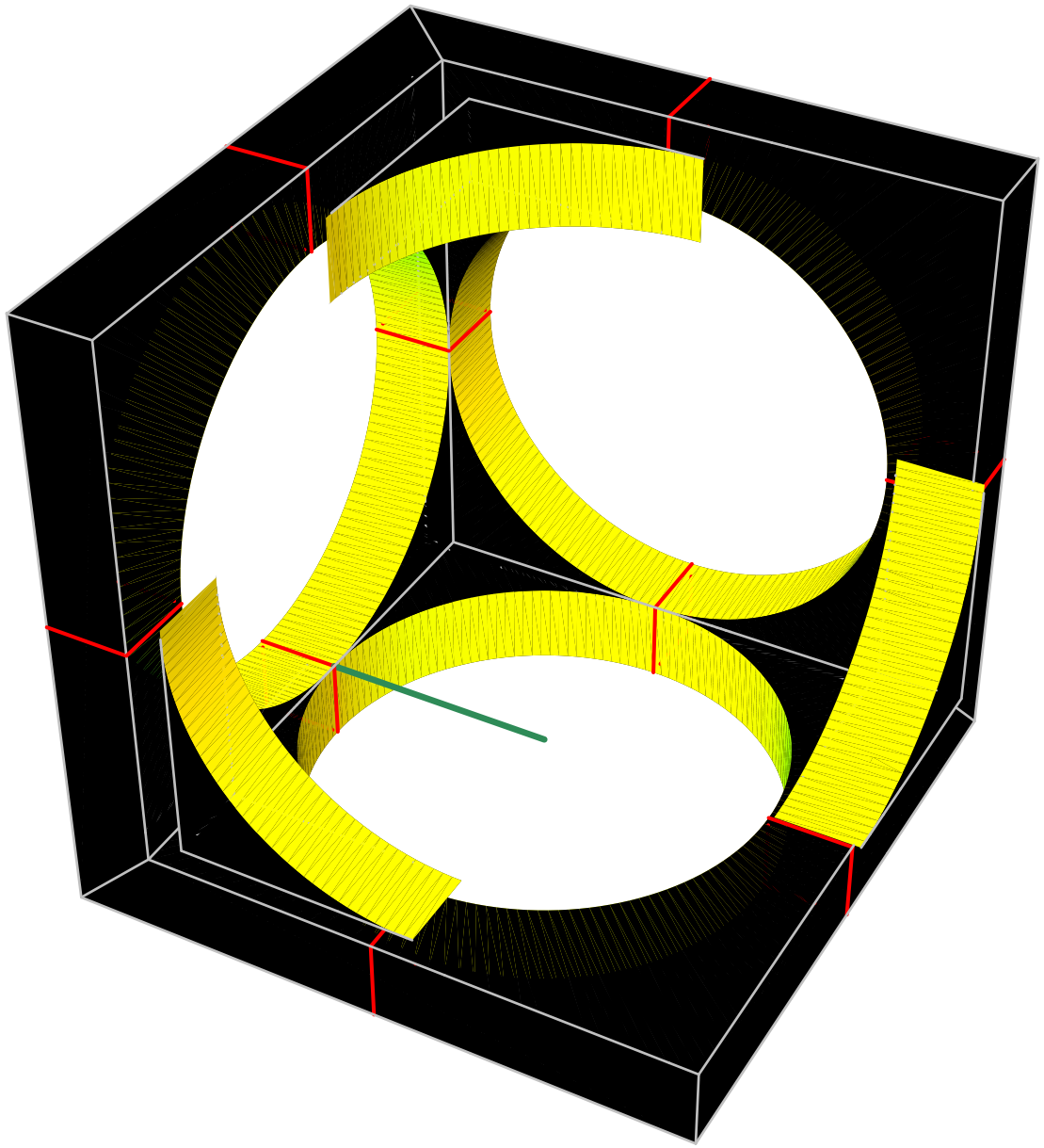
This is one missing piece.



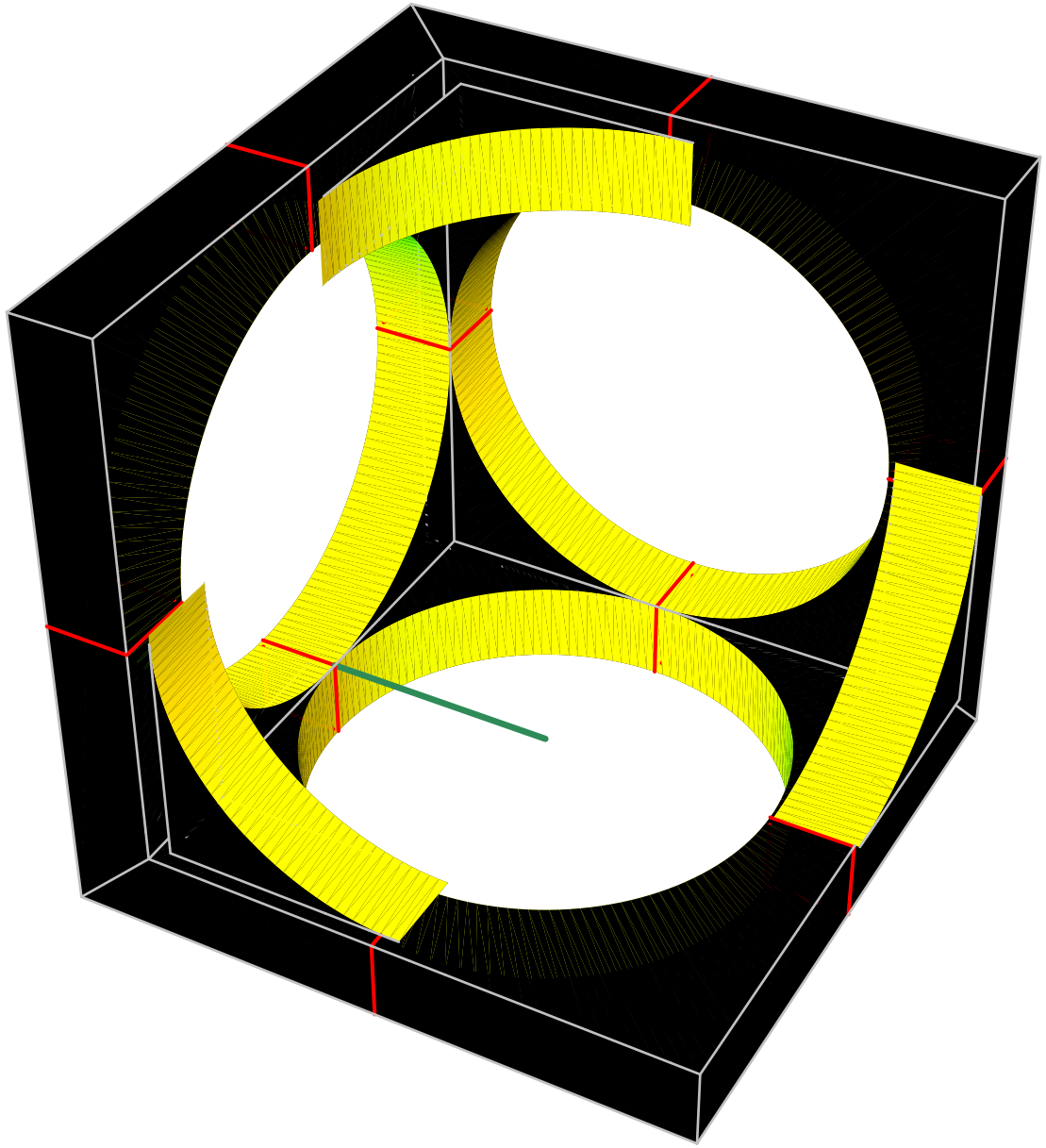
In fact,
we need
three of them.



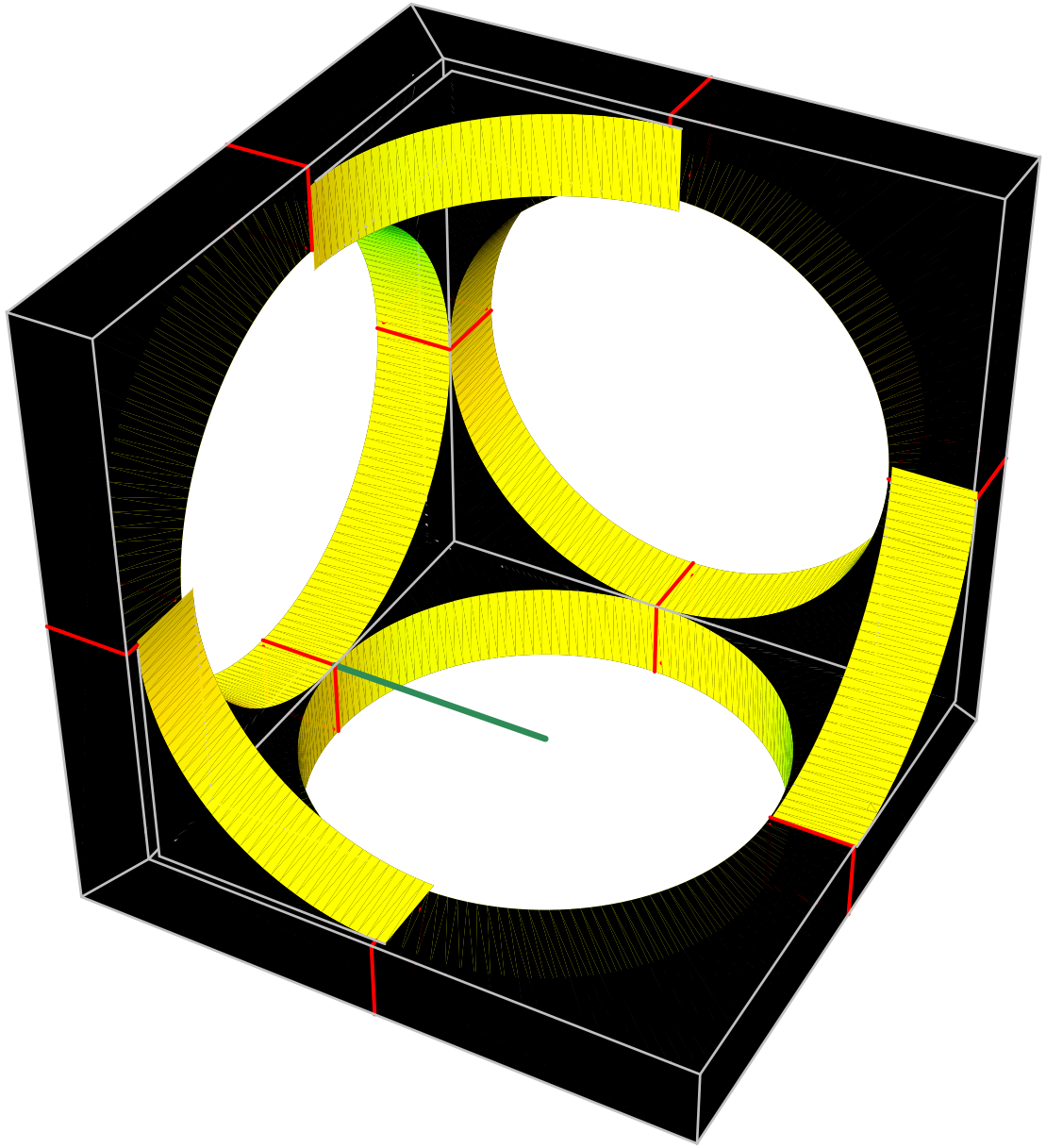
Place them.



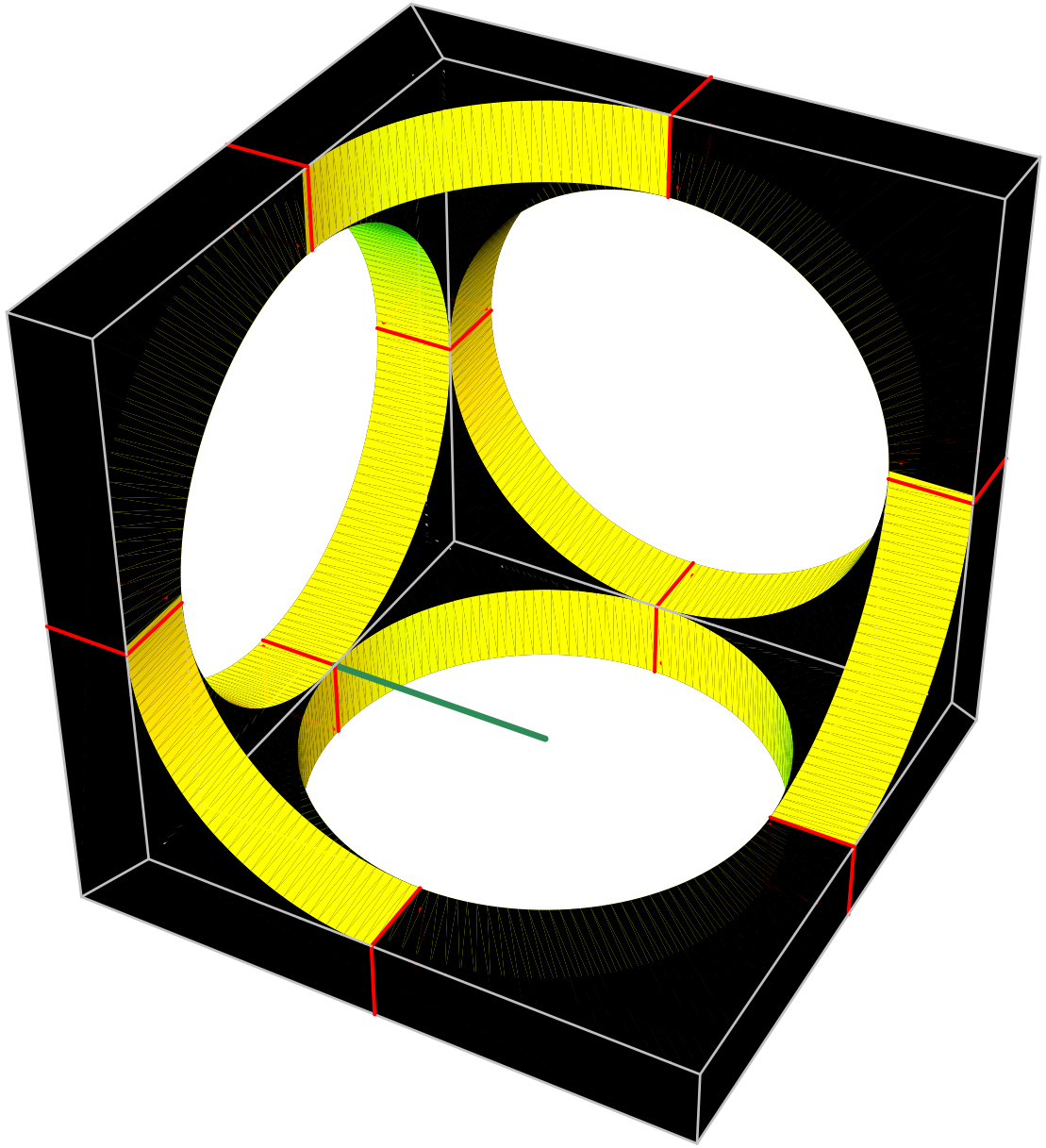
Place them.



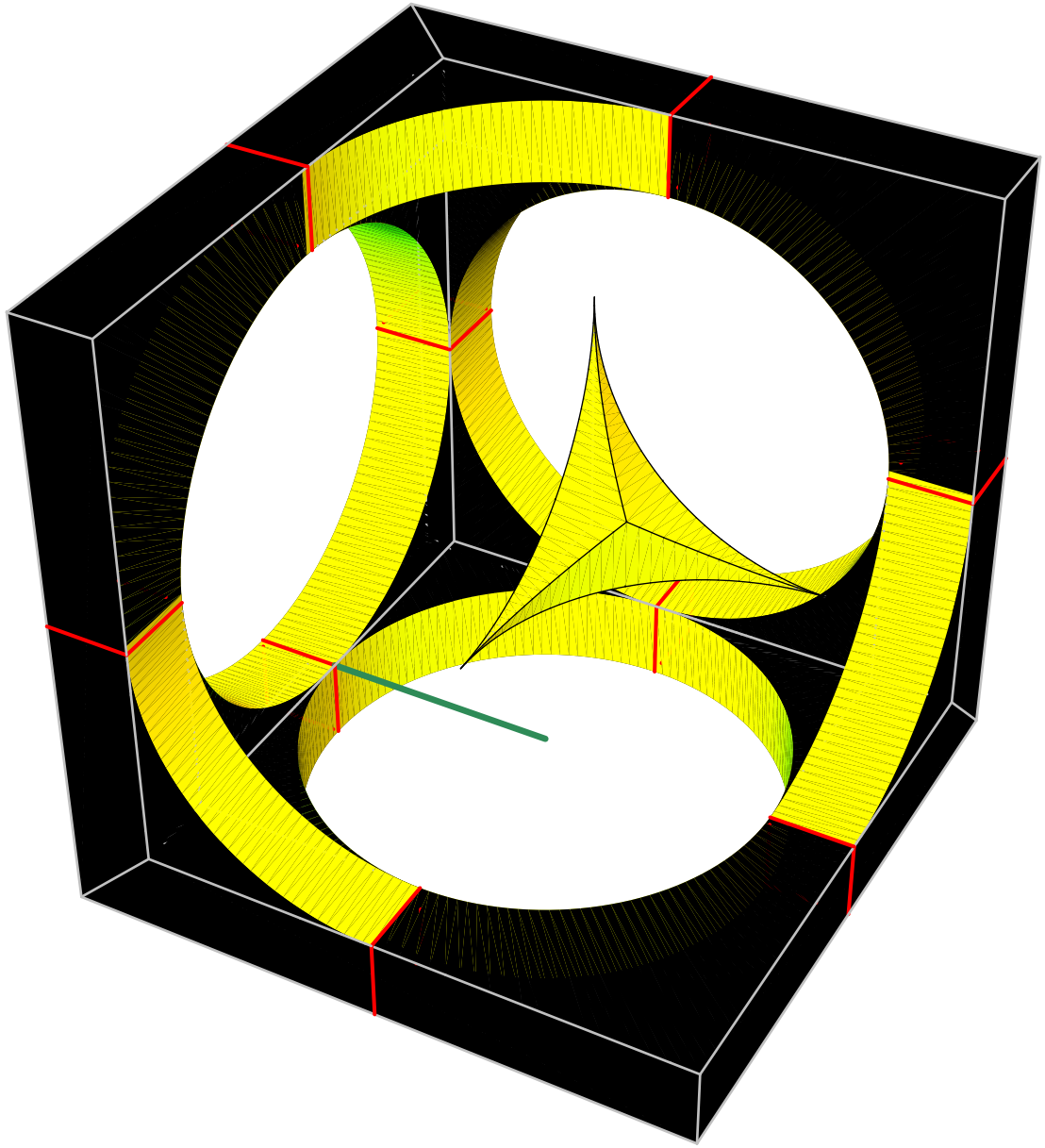
Closer!



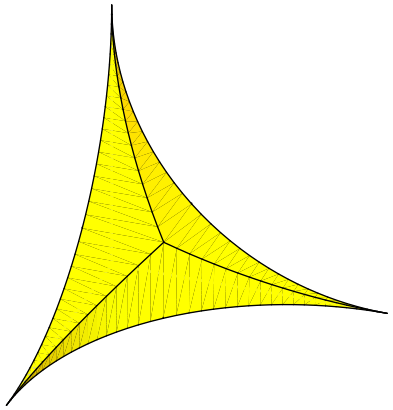
Now, four identical pieces are still missing.



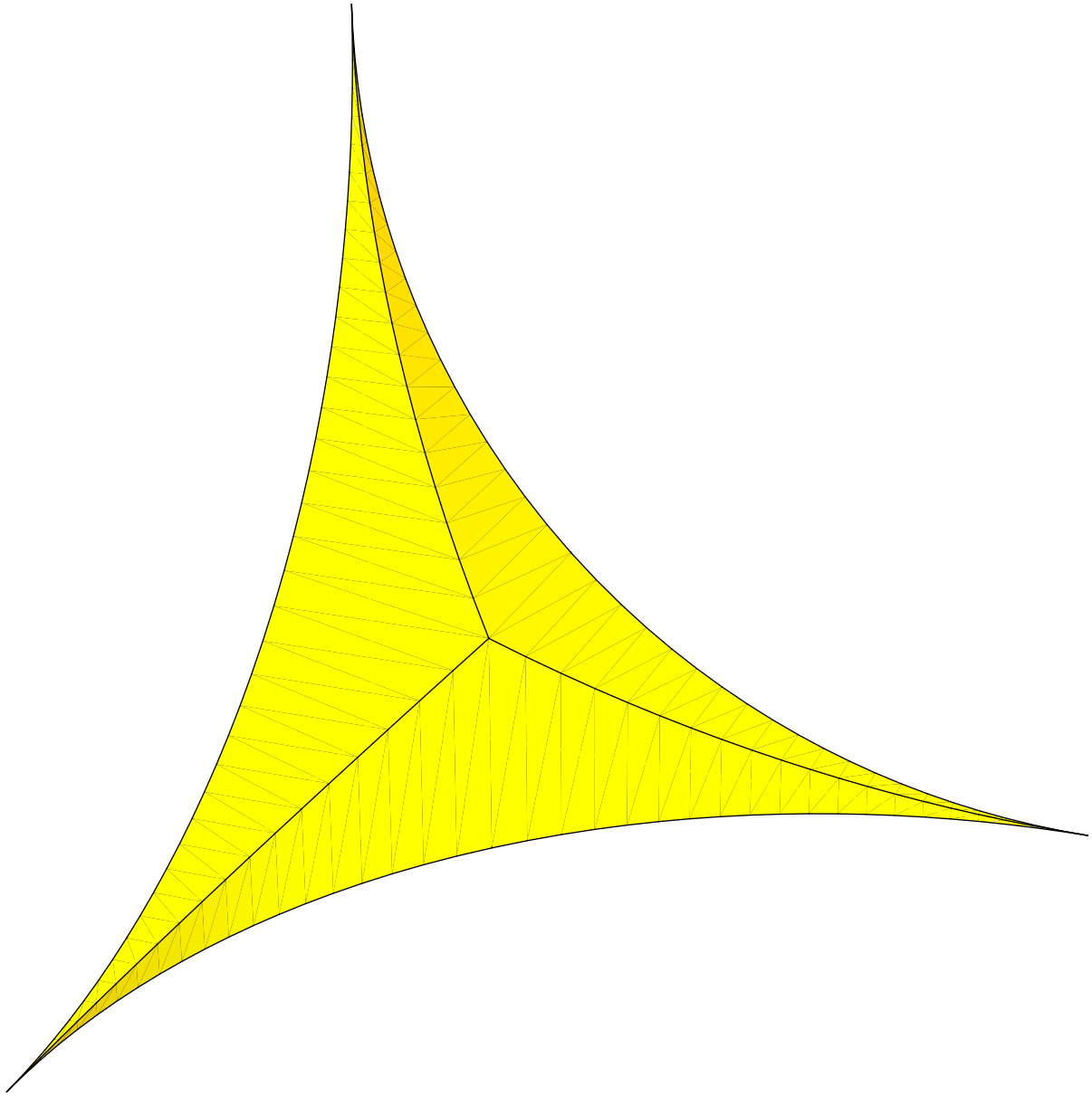
This is one missing piece. It has a very interesting shape.



This is the missing piece.



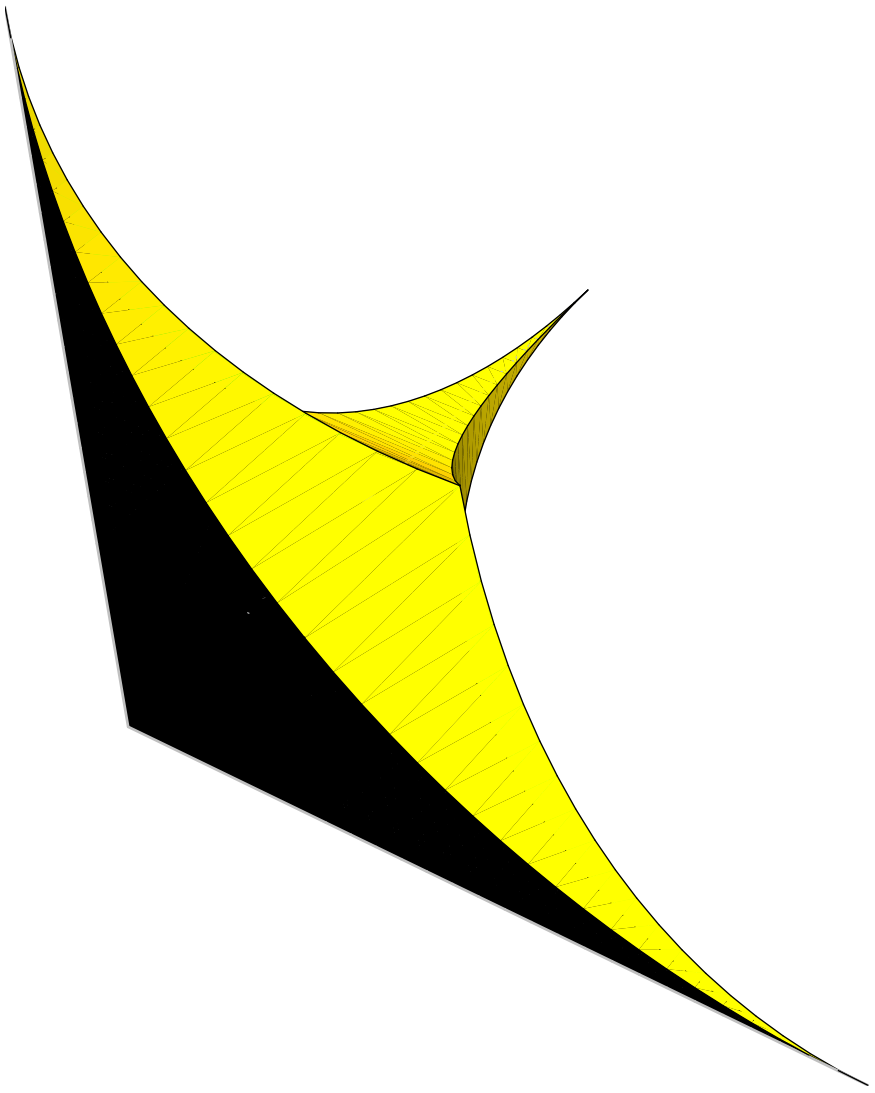
This is the missing piece in its full glory.

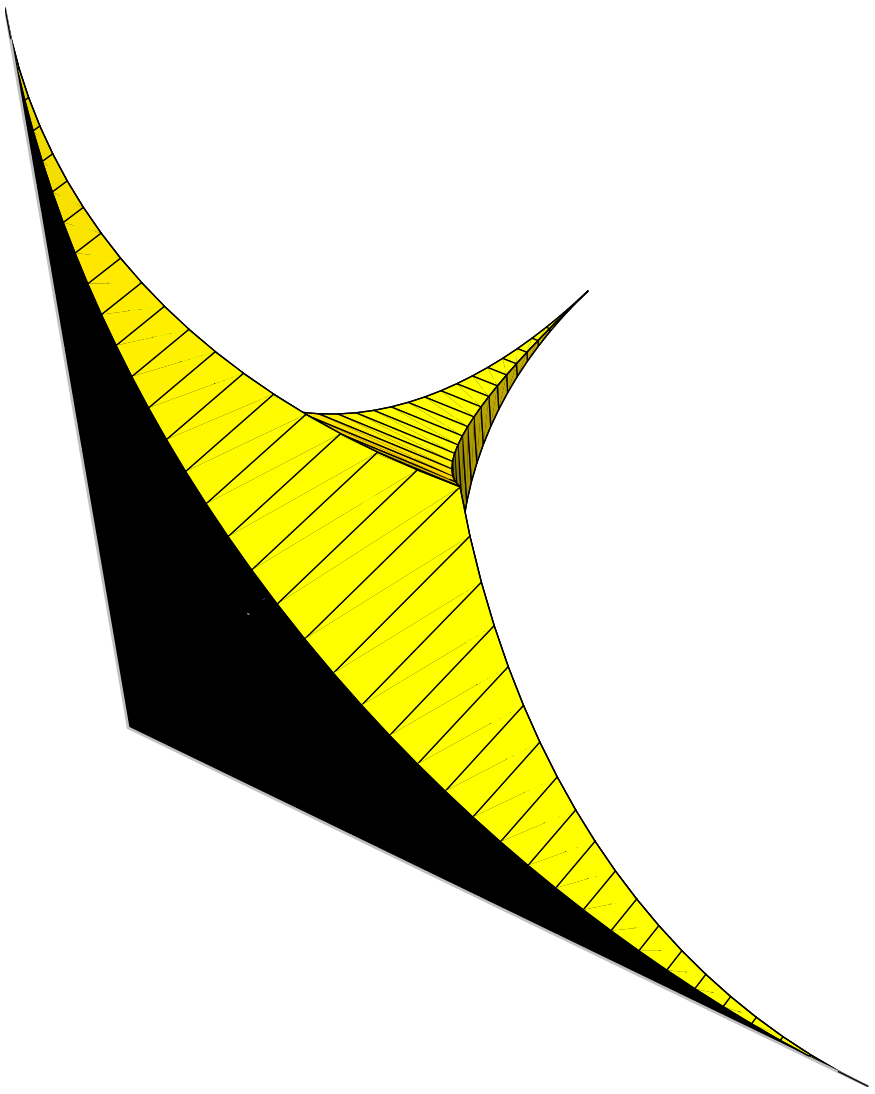


Heart

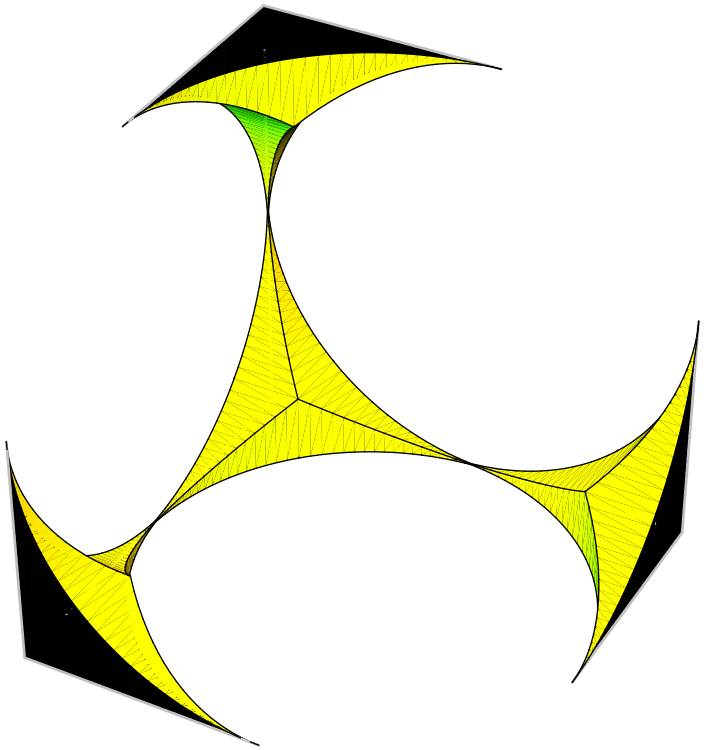
Math

MatHeart

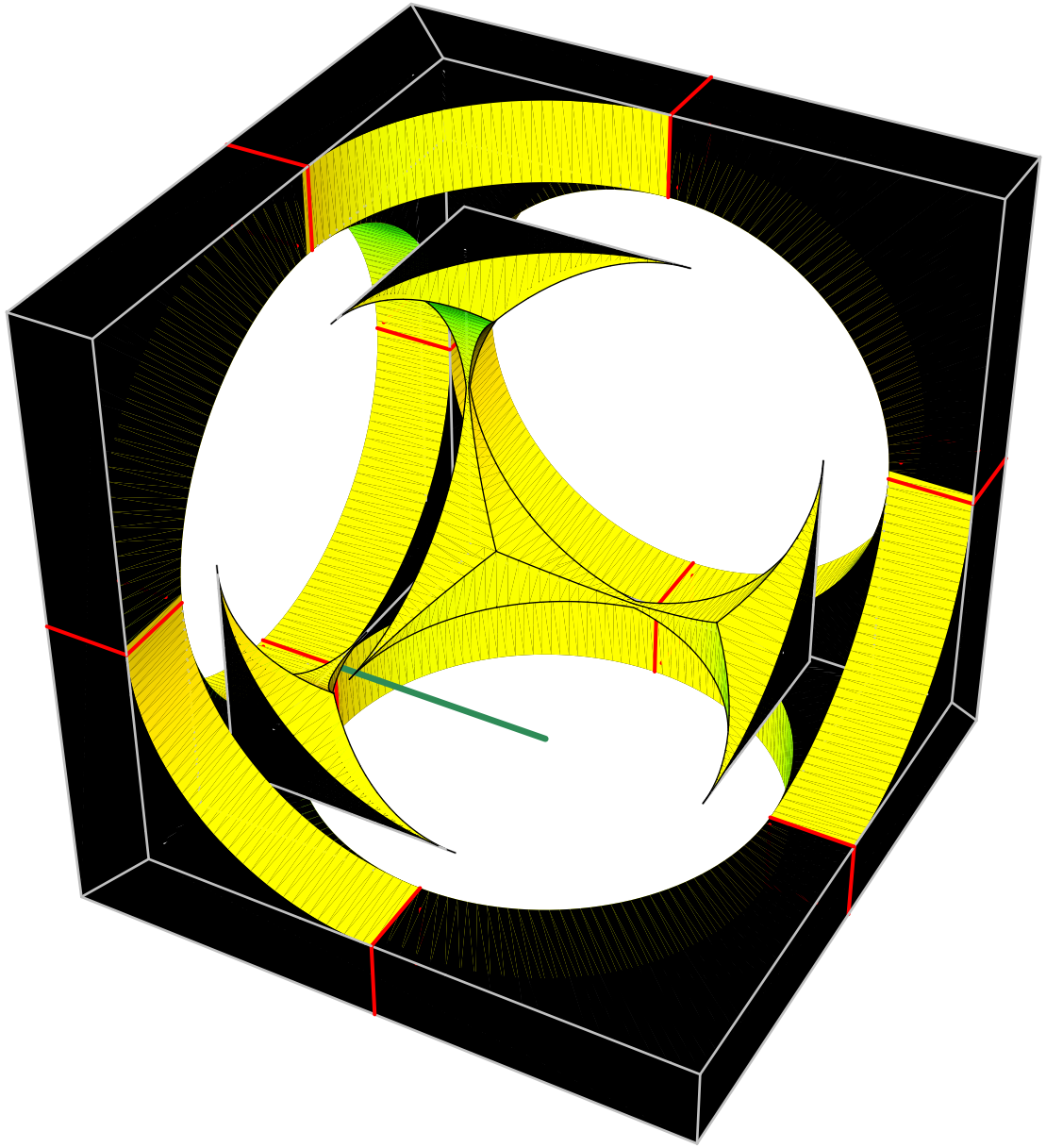




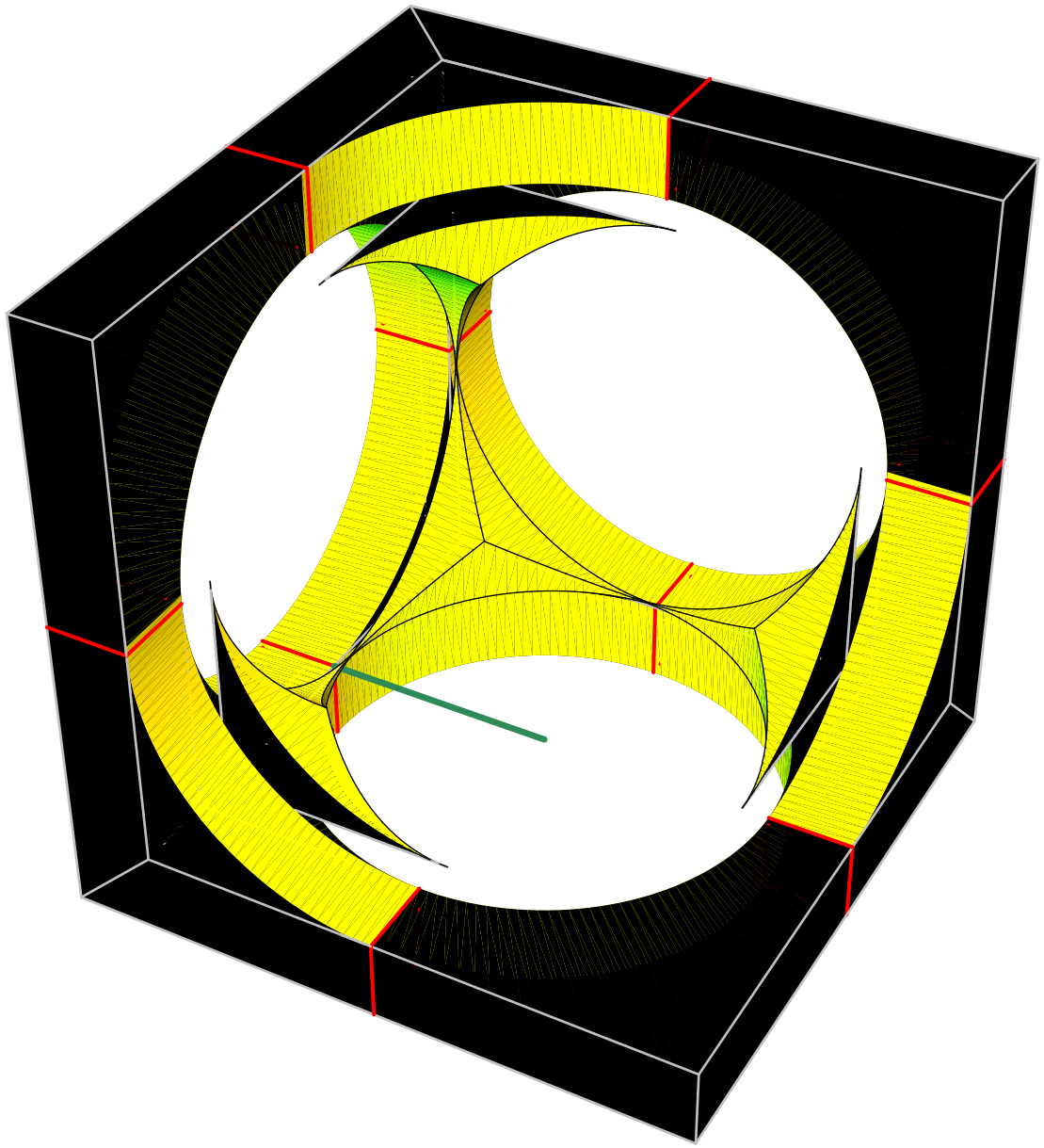
We need four
MatHearts
to complete
the sculpture.



Place four
MatHearts
in four corners.

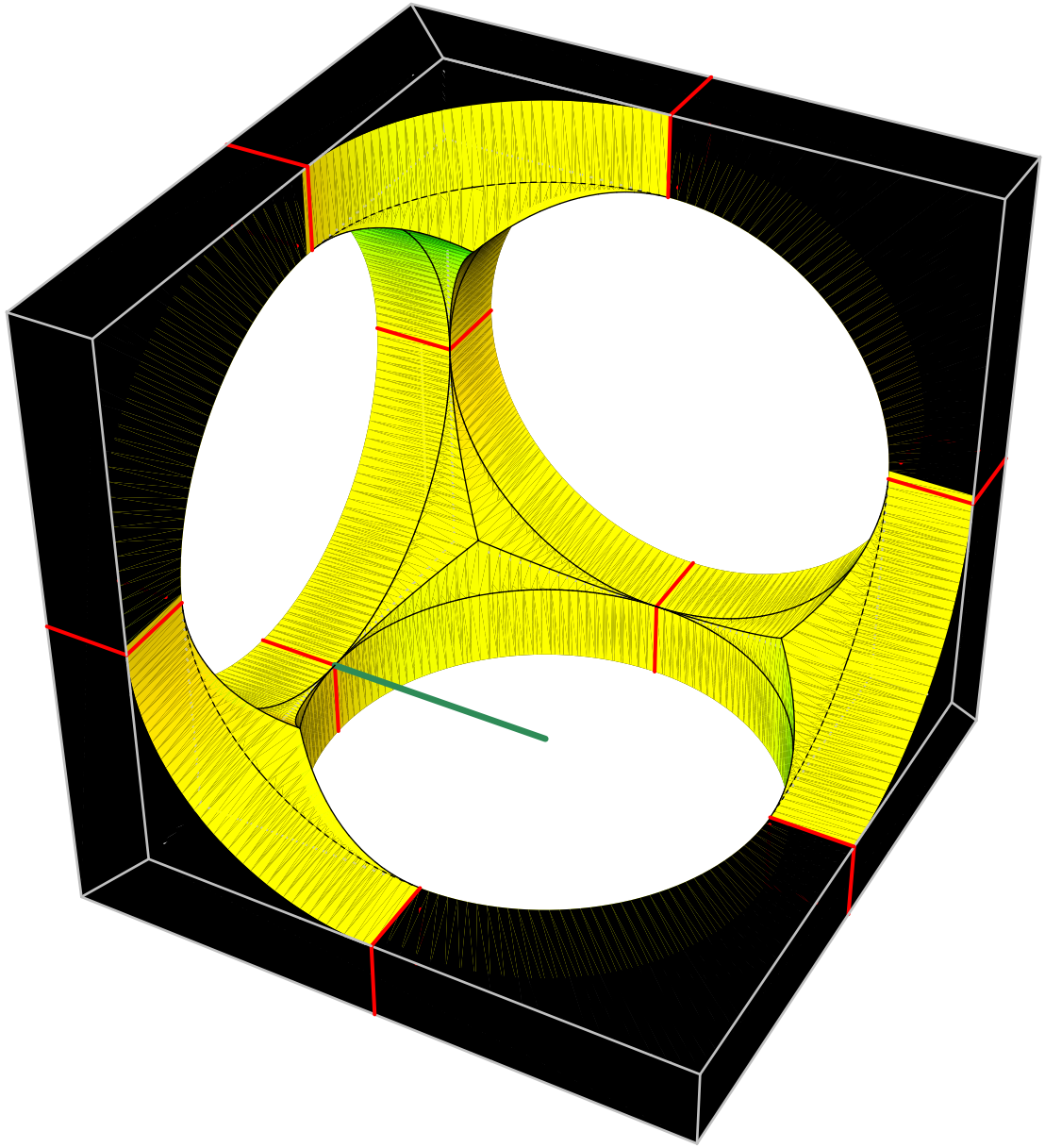


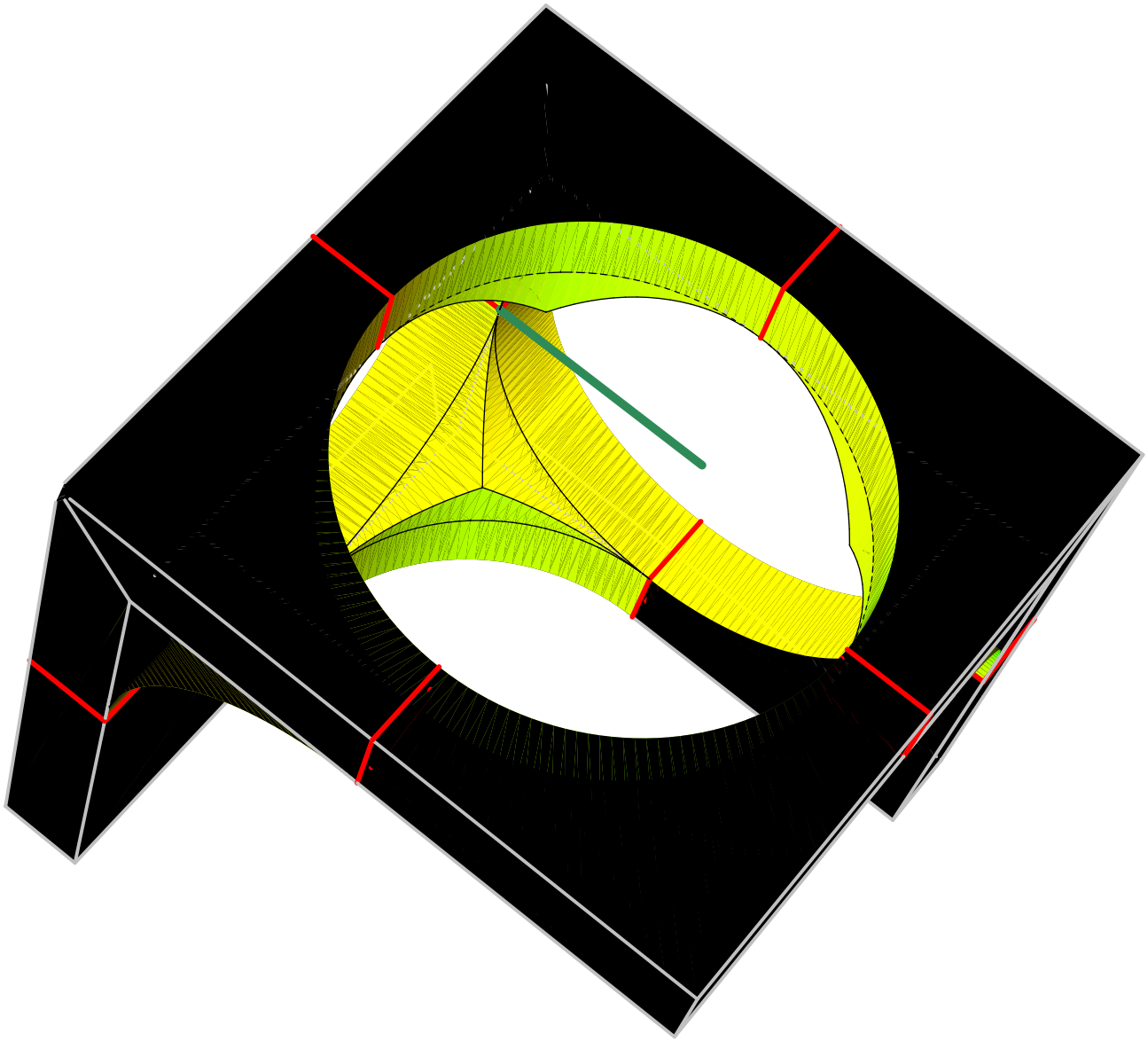
Place four
MatHearts
in four corners.



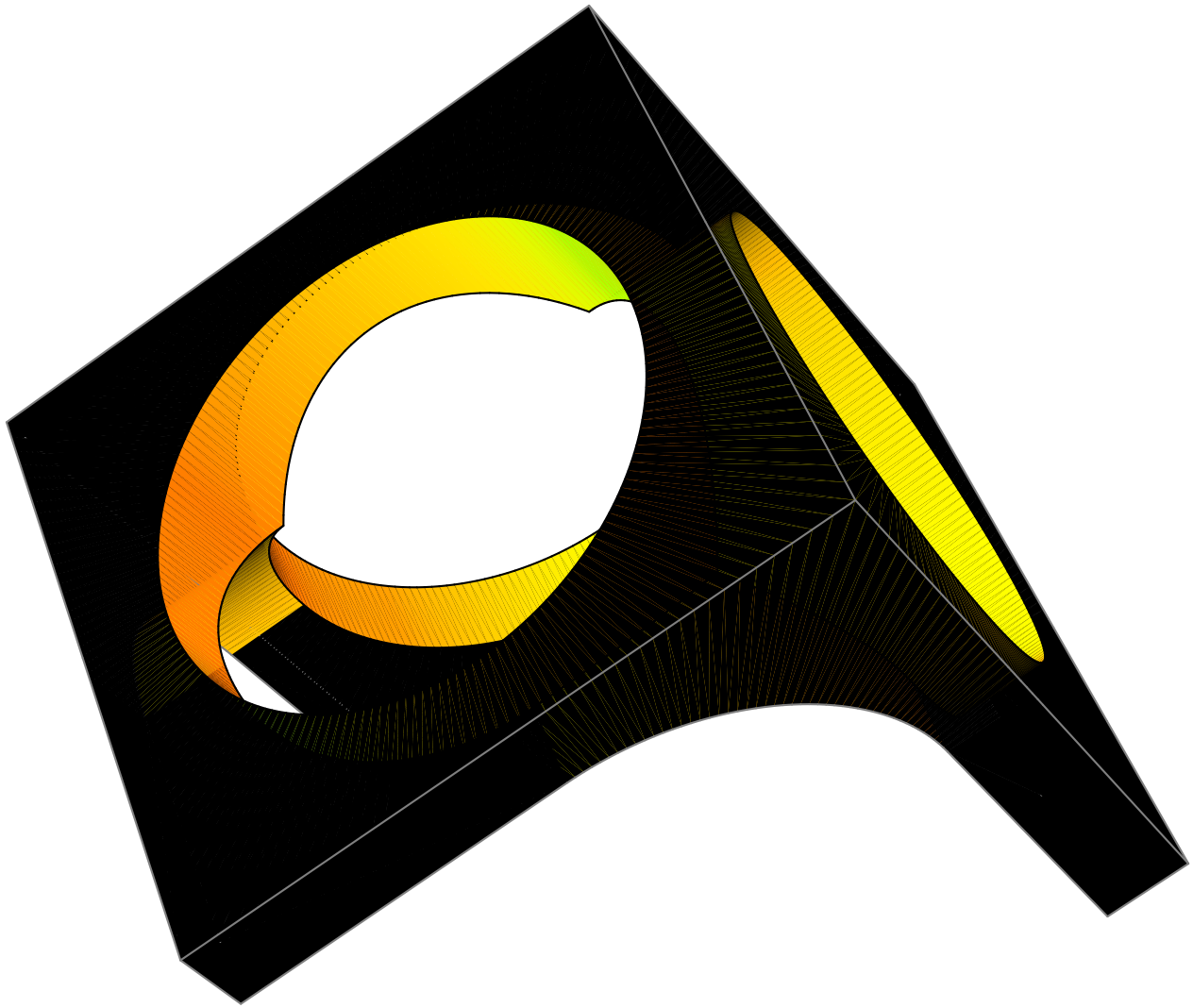
The construction
is complete.

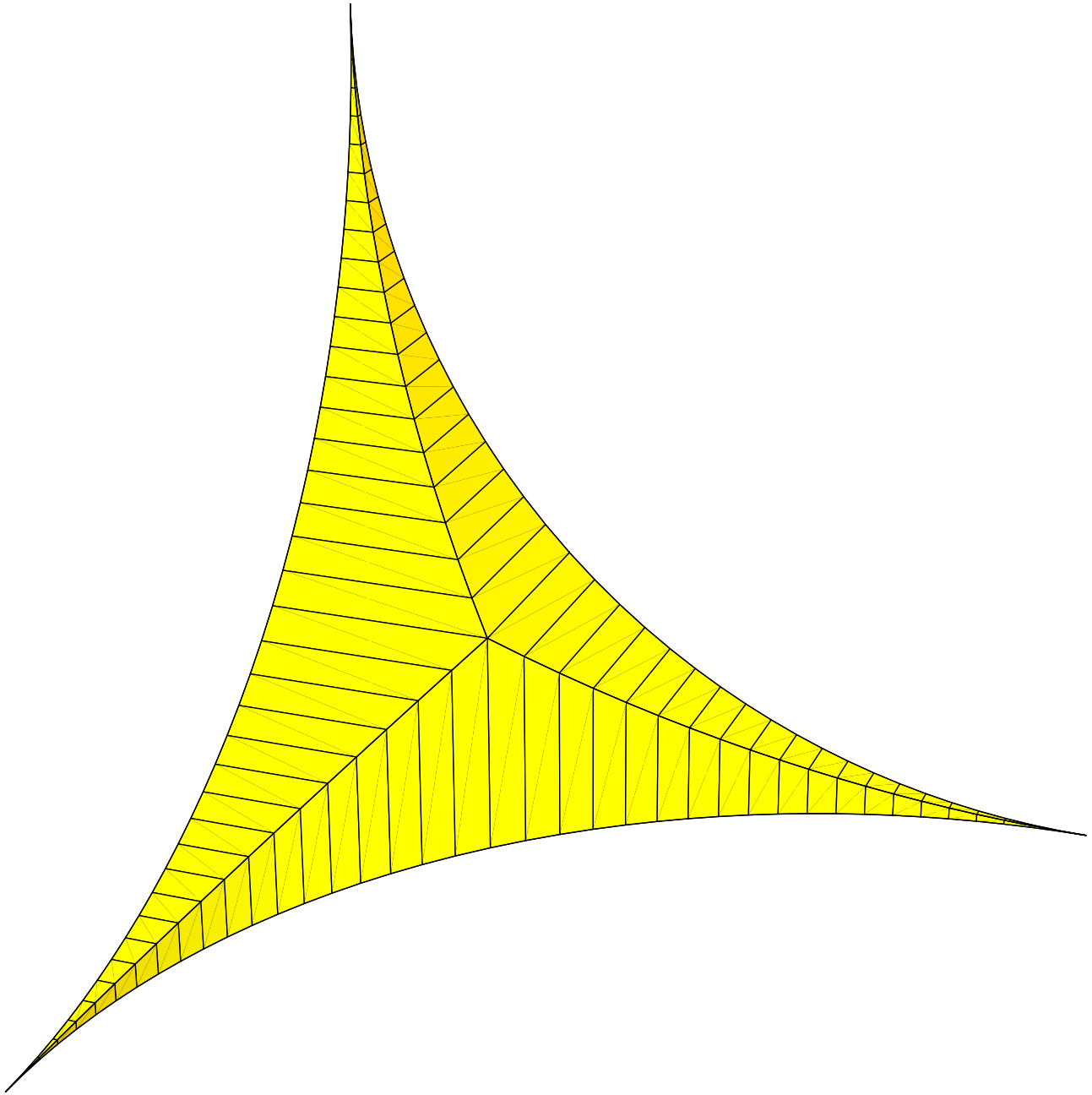
The only volume
which is hard
to calculate is
the volume of
the MatHeart.

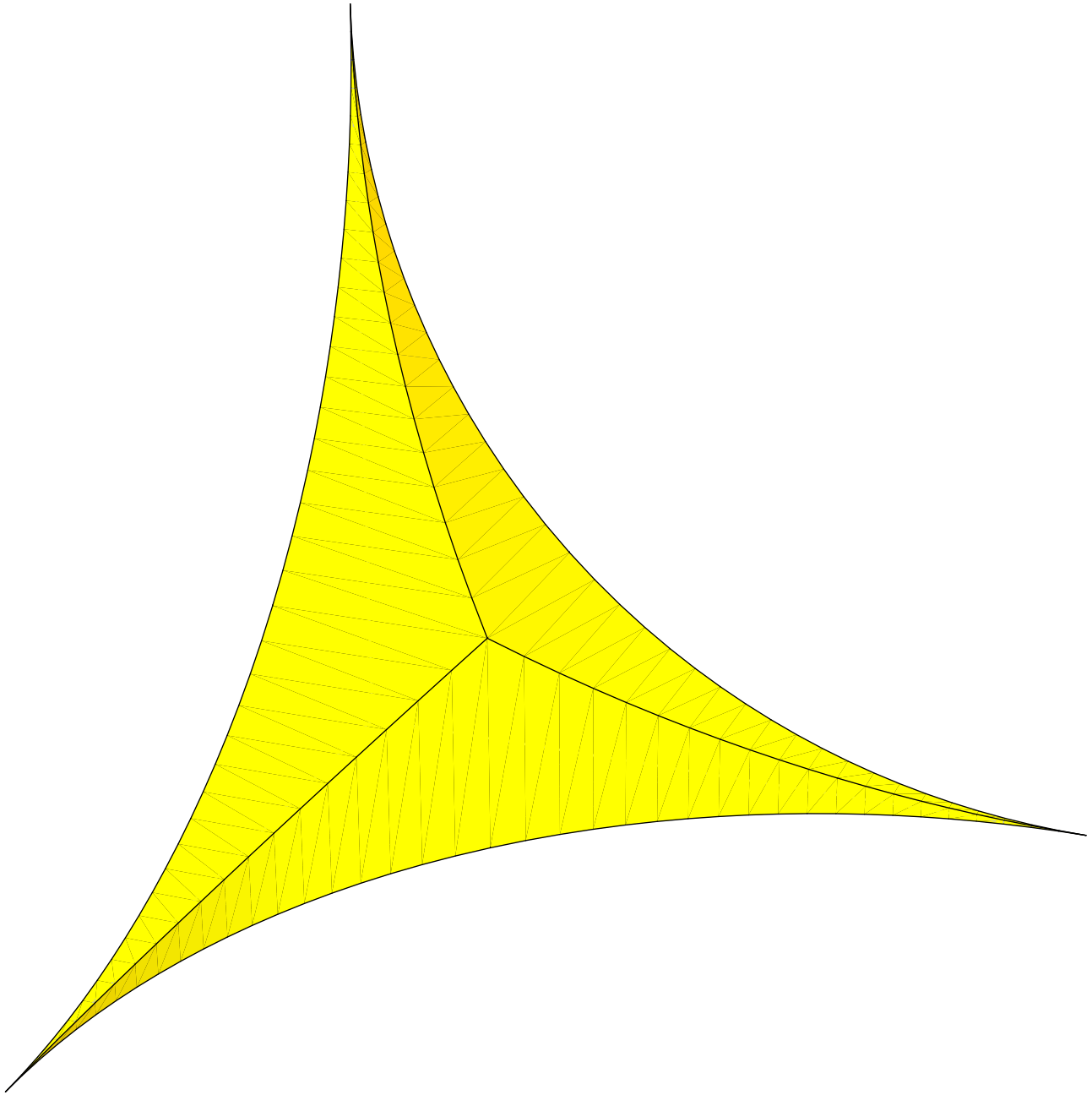


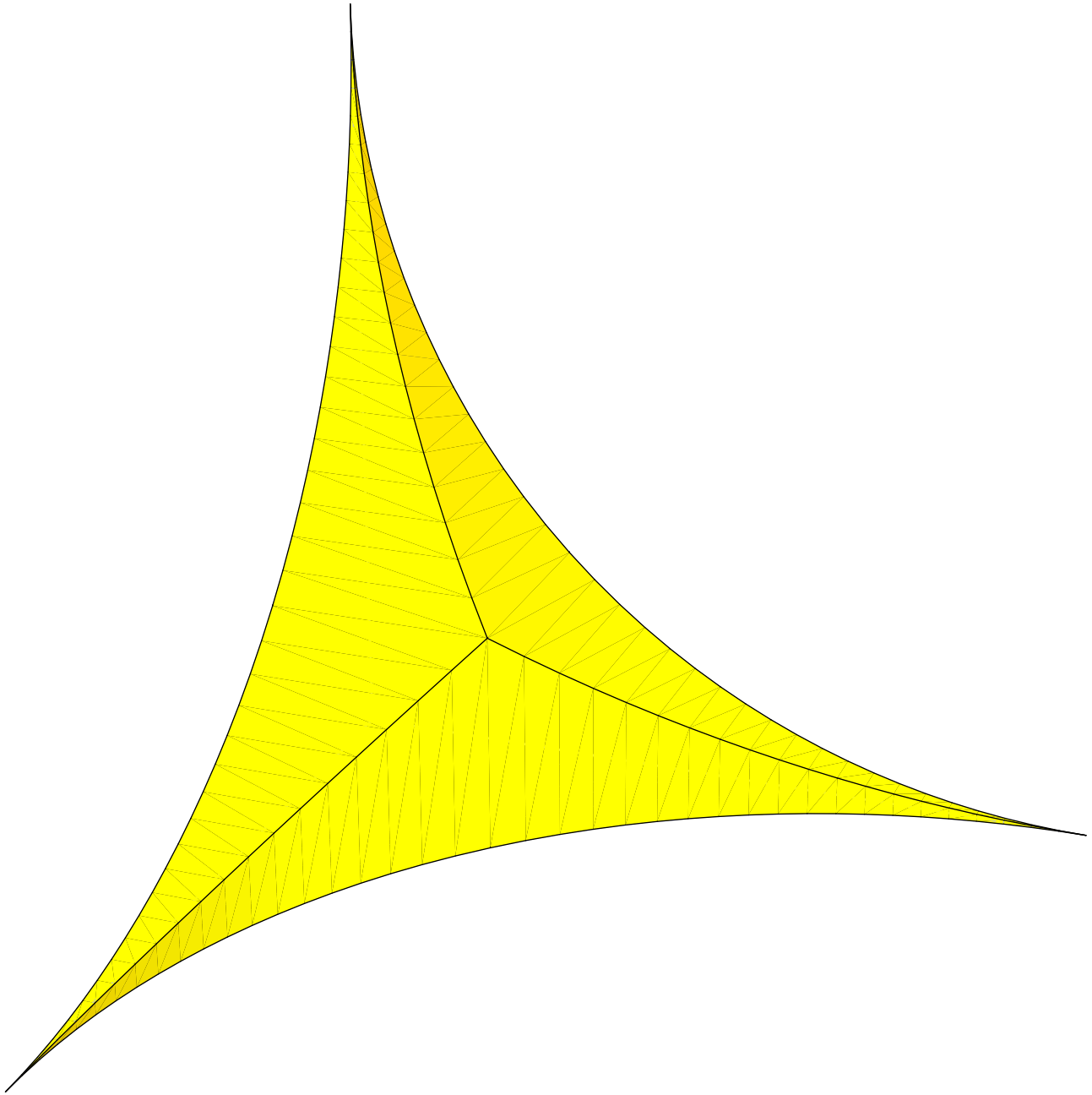


Skyviewing Sculpture rotates









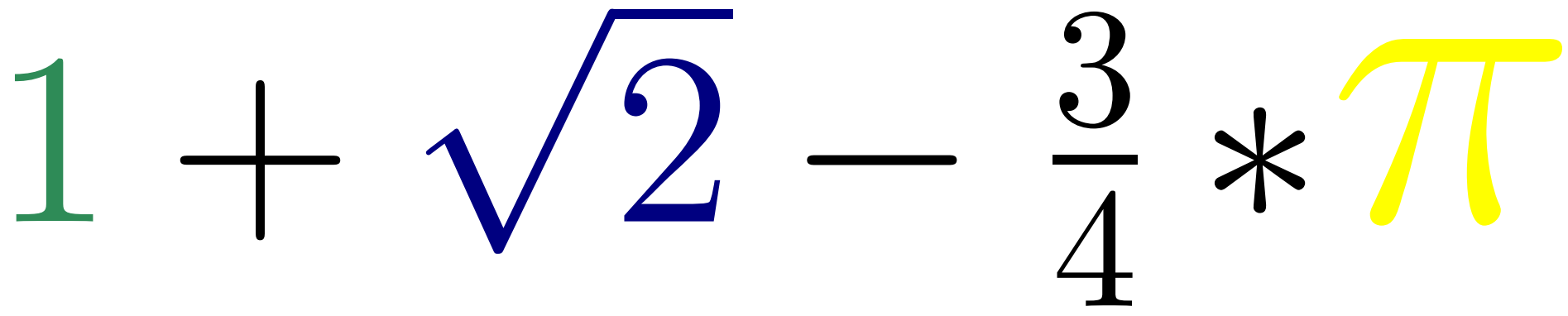
Math and Art joined together today

in MatHeArt

$$\left(1-\frac{1}{\sqrt{2}}\right)^3+3\int_0^{\frac{1}{\sqrt{2}}}\left(1-\sqrt{1-x^2}\right)^2\,dx$$

$$\left(1-\frac{1}{\sqrt{2}}\right)^3+3\int_0^{\frac{1}{\sqrt{2}}}\left(1-\sqrt{1-x^2}\right)^2dx$$

$$1+\sqrt{2}-\frac{3}{4}*\pi$$


1 + √2 − 3/4 * π

$$1 + \sqrt{2} - \frac{3}{4} * \pi$$