Explanation of Pi

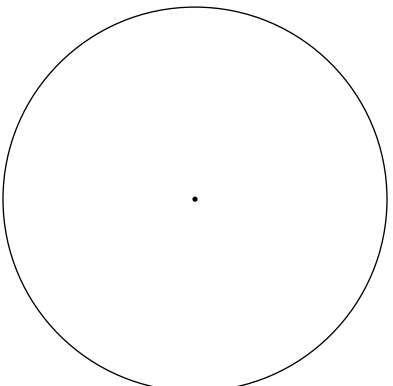
This is a story-board, a mock-up of an animation. It can be viewed in Acrobat Reader. Final form will be an animation, perhaps an mpeg file. Most of the text will be spoken (perhaps with text for the hearing impaired, as well.)

TO USE: Use Reader s View menu s Single Page command, then the Page Down key will move to the next frame.

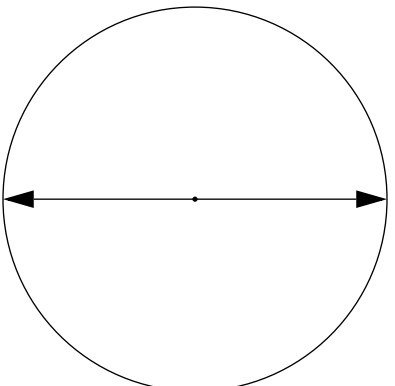
A teacher is welcome to use this story-board in a class (for free) if they
1) send email comments, criticisms and requests to math@strausses.net
2) join the Yahoo razzmath group.
(Send an email to razzmath-subscribe@yahoogroups.com)

More information is available at http://randy.strauss.net/math

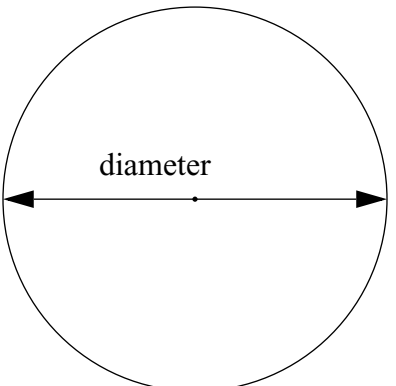
A circle has a size. It s width



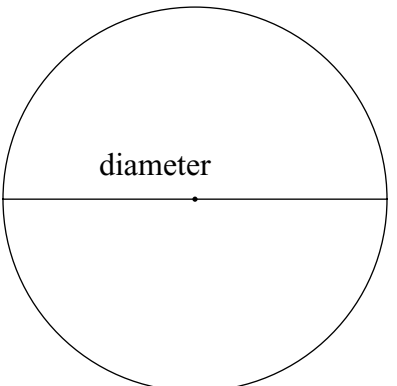
A circle has a size. It s width is called



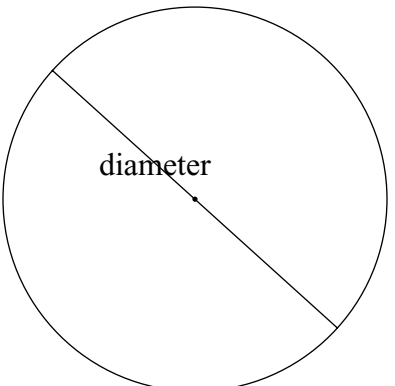
A circle has a size. It s width is called the diameter.



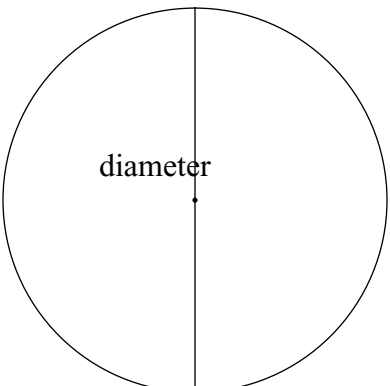
We can draw it like this (without arrows), too



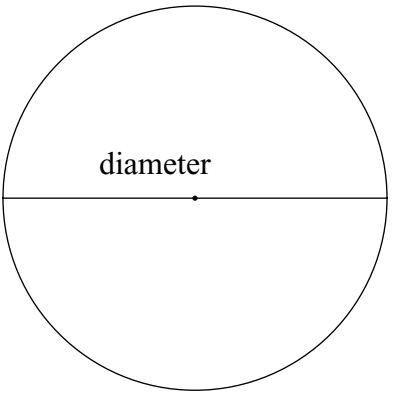
Any line through the widest part of the circle



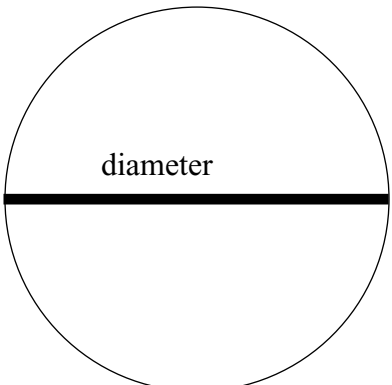
goes through the center and is a diameter.



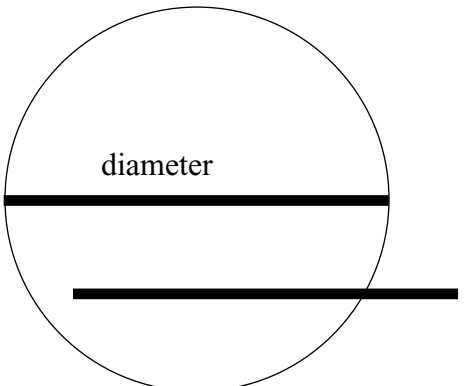
If we take the



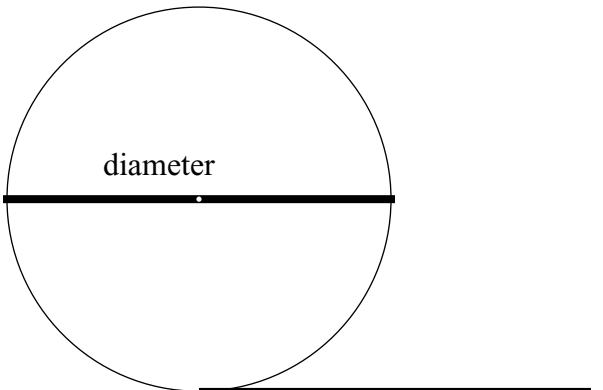
If we take the diameter

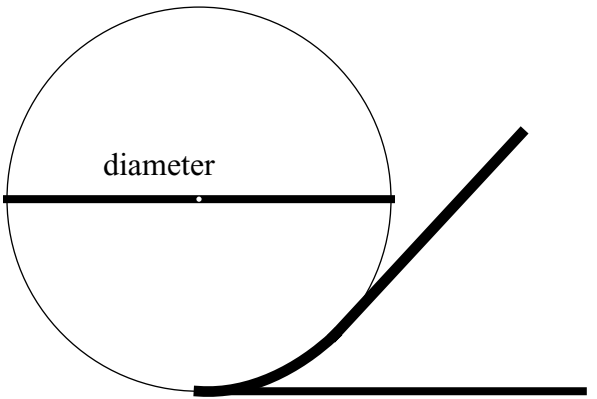


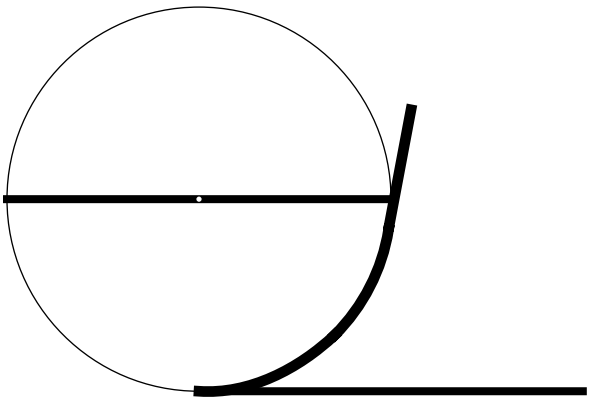
If we take the diameter and



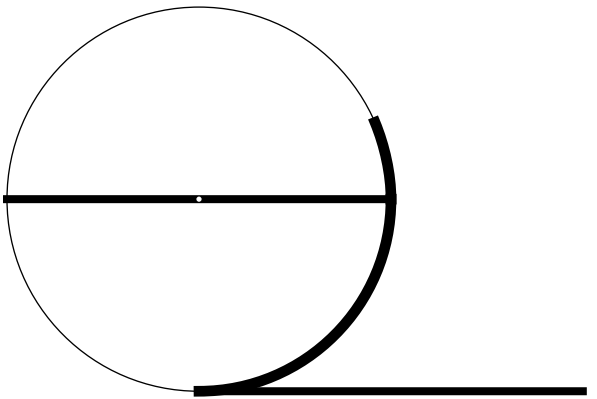
If we take the diameter and fit it around the circle




diameter



It fits almost a third of the way around



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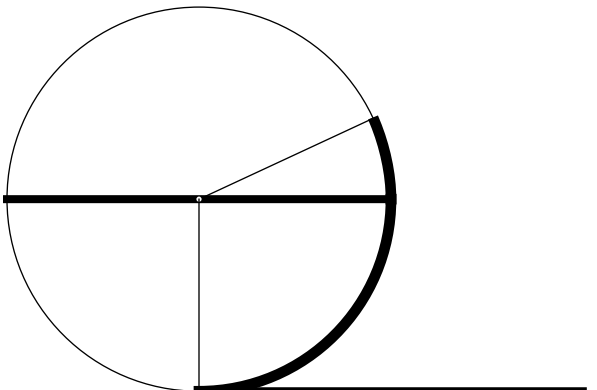
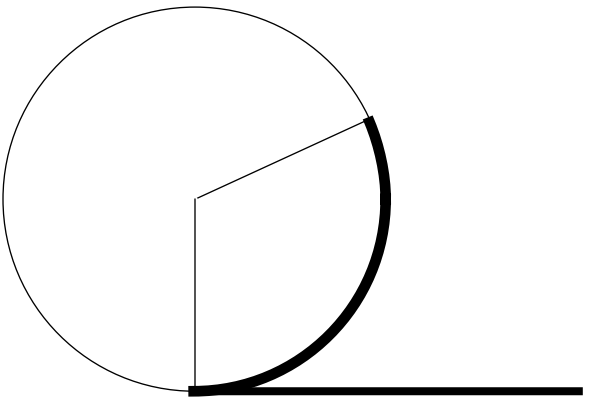
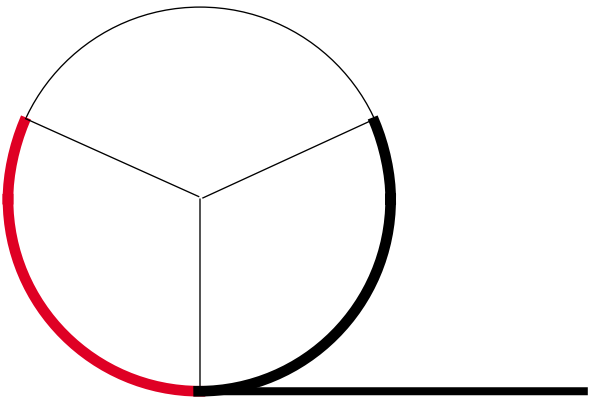


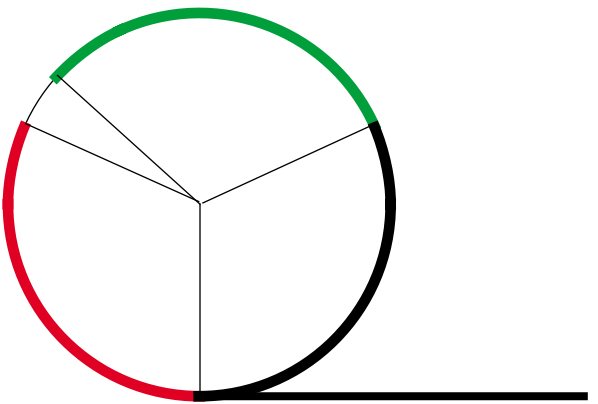
So we can fit two more



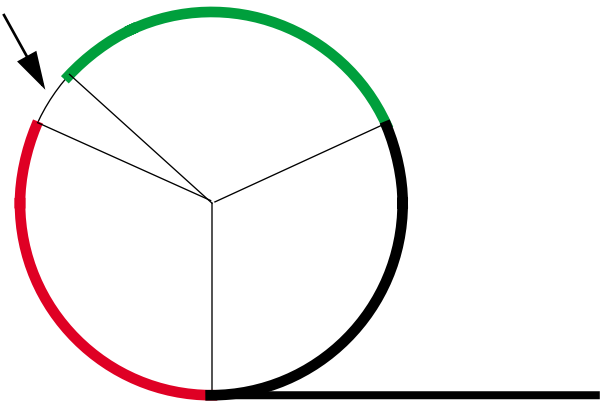
So we can fit two more



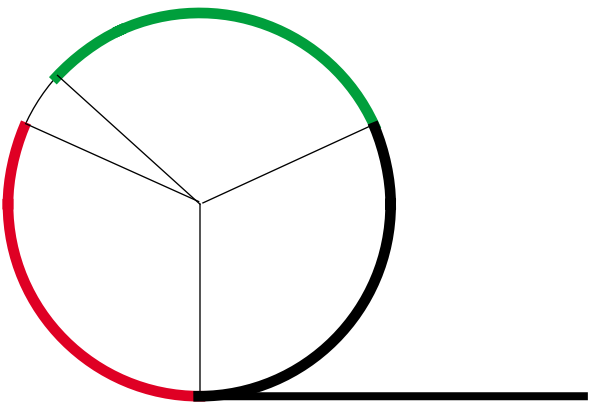
So we can fit two more



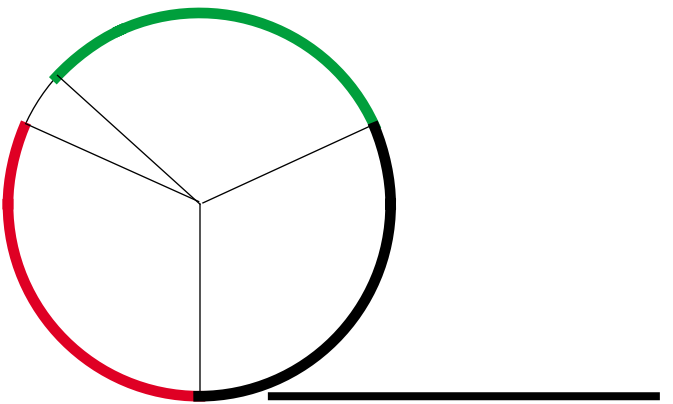
So we can fit two more and have a bit left over.



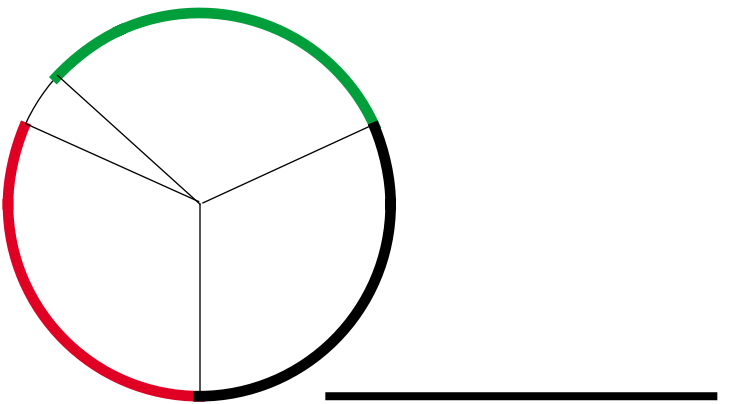
How much is left over?



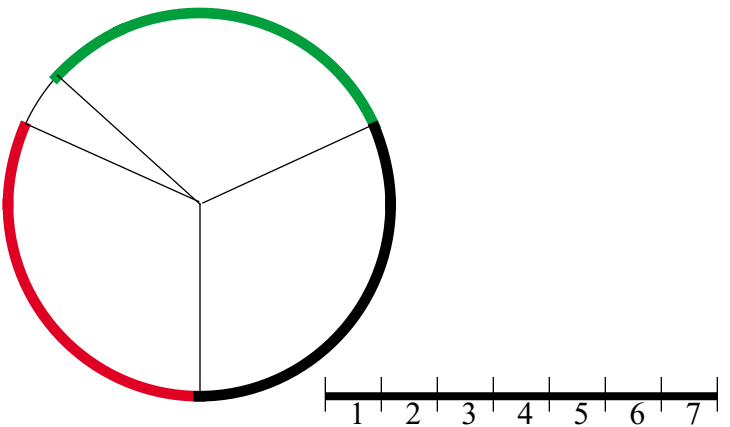
How much is left over?



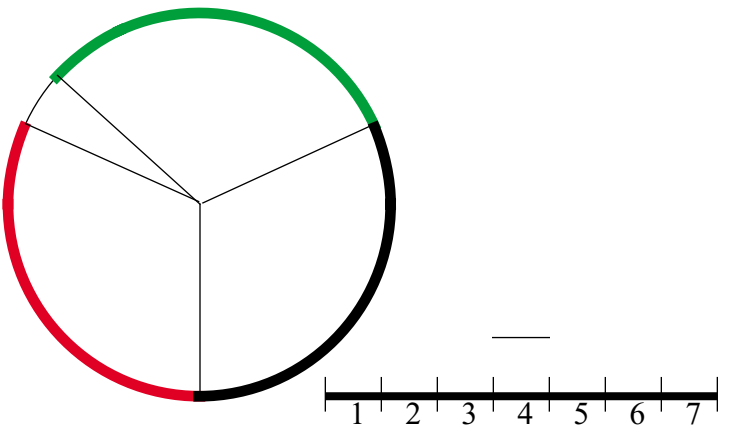
How much is left over?



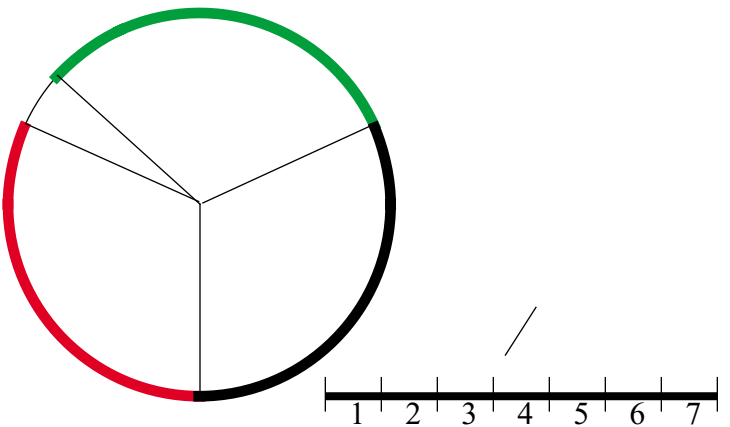
If we divide the diameter into 7ths...



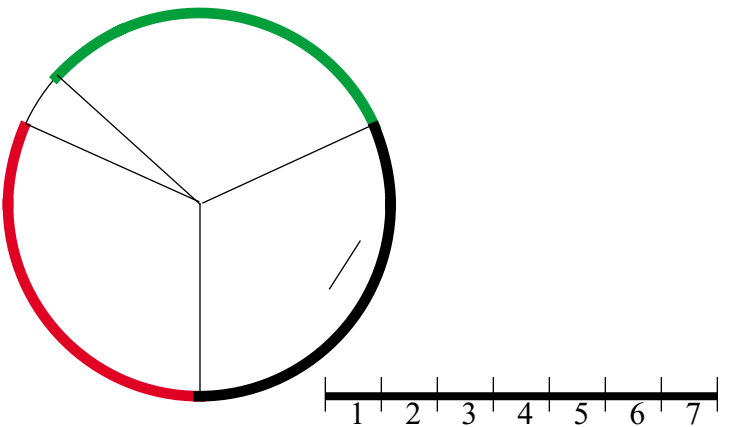
We see that one seventh



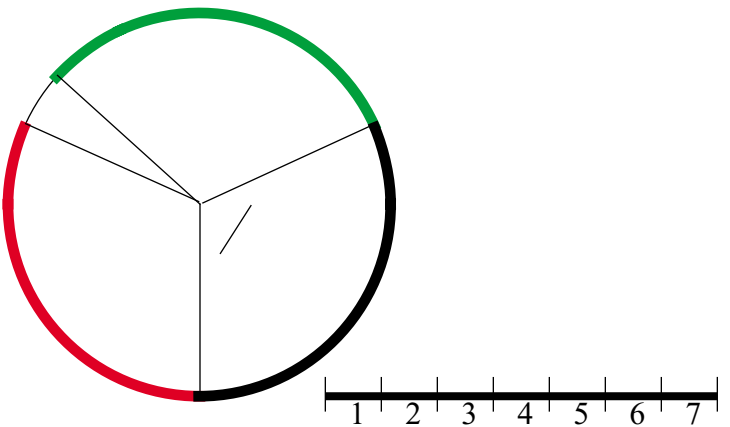
We see that one seventh



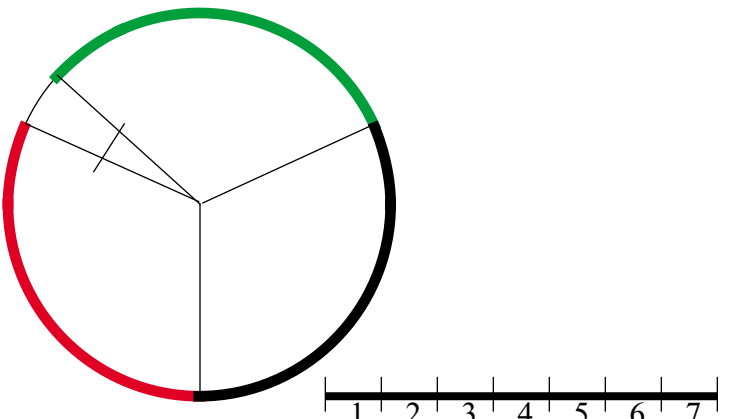
We see that one seventh



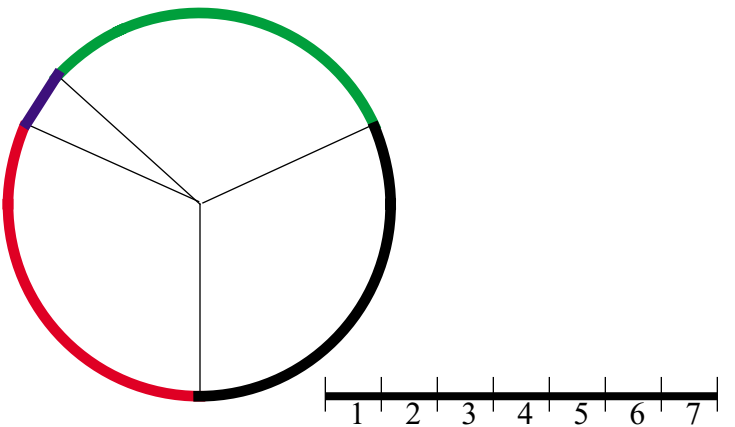
We see that one seventh



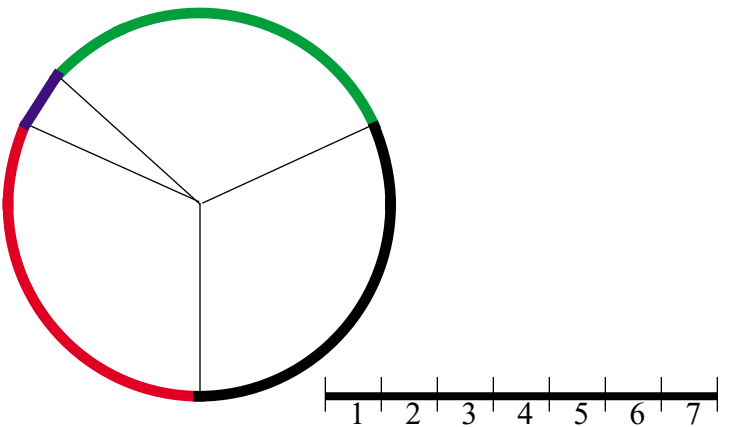
We see that one seventh



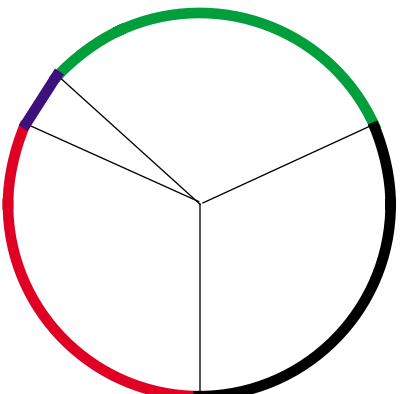
is only a tiny bit too big- but it s very, very close.



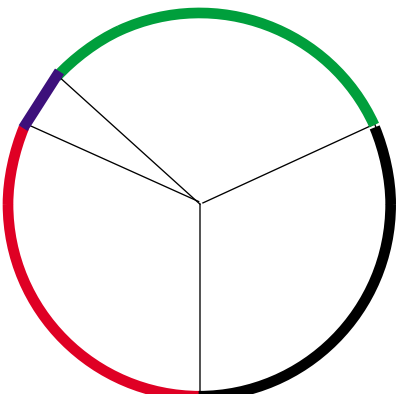
So a bit less than $3\frac{1}{7}$ diameters fit around the circle.



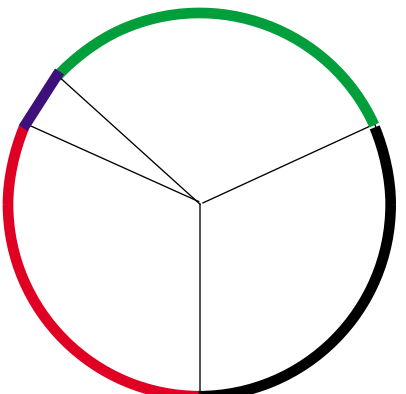
Instead of saying a bit less than three and a seventh



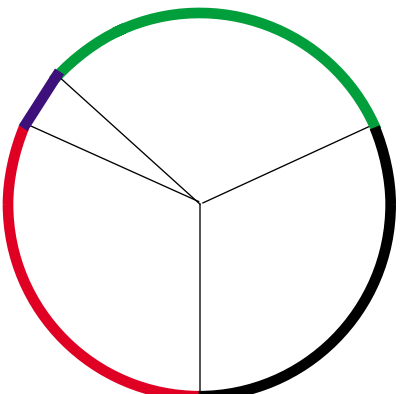
Many years ago, the Greeks named this number, Pi



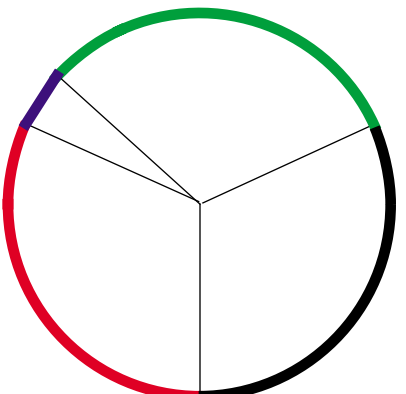
We still call this number Pi and write the greek letter π.



π is just a number. Exactly π diameters fit around a circle.



π is a tiny bit less than $3\frac{1}{7}$.



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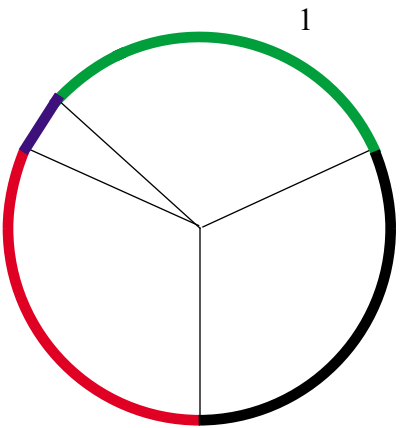

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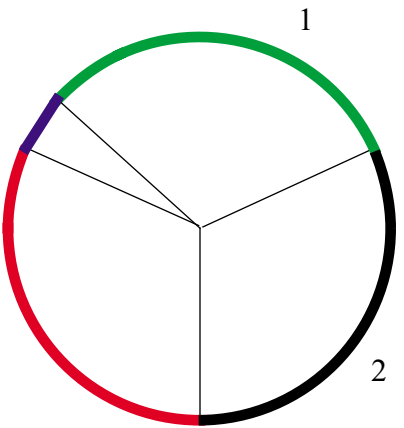

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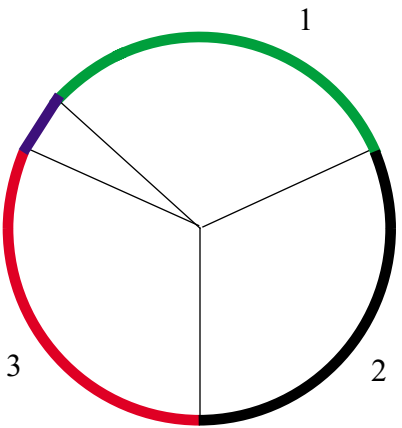

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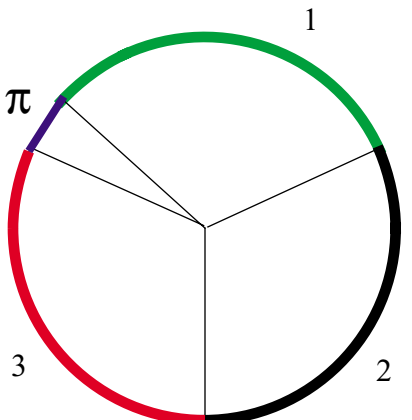

The end.

Each animation is designed to be one day s lesson, so each probably seems incomplete. For instance, this lesson doesn t mention circumference or give either of the formulas, $C = \pi d$ or $C = 2\pi r$.

Geometry lends itself well to animations, but algebra seems to be a more enticing field- kids have even more trouble with algebra and there seem to be a lot of basic concepts in algebra that eludes kids. Some basic number concepts, too, could use great conceptual explanations, such as fractions & least common denominators, even multiplication and division... -Randy