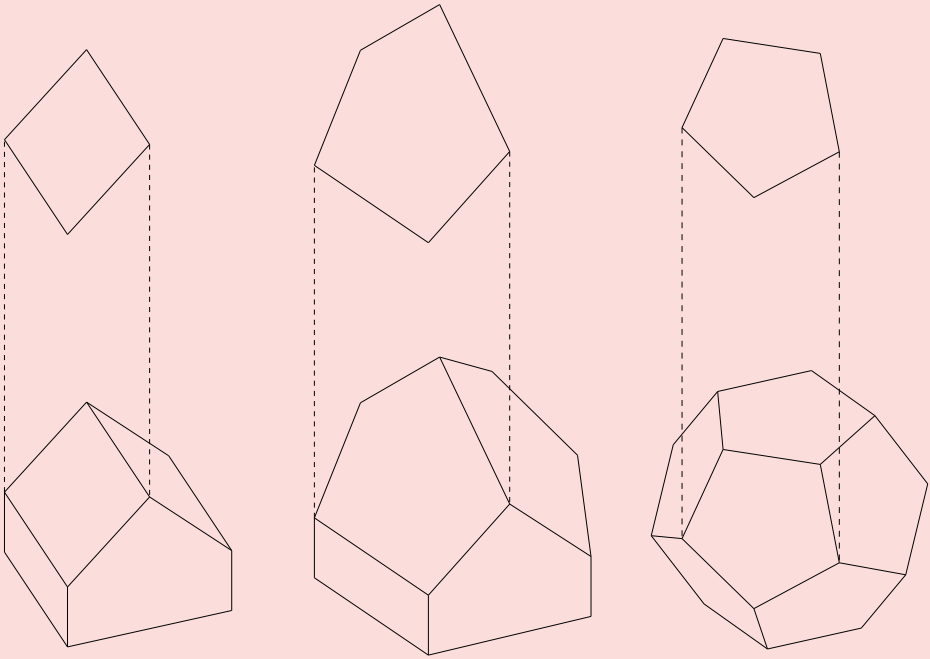
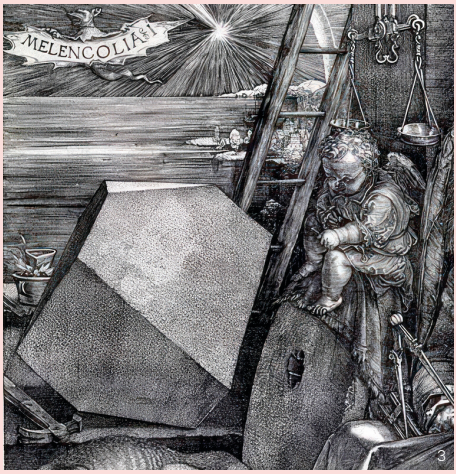
Pentagon

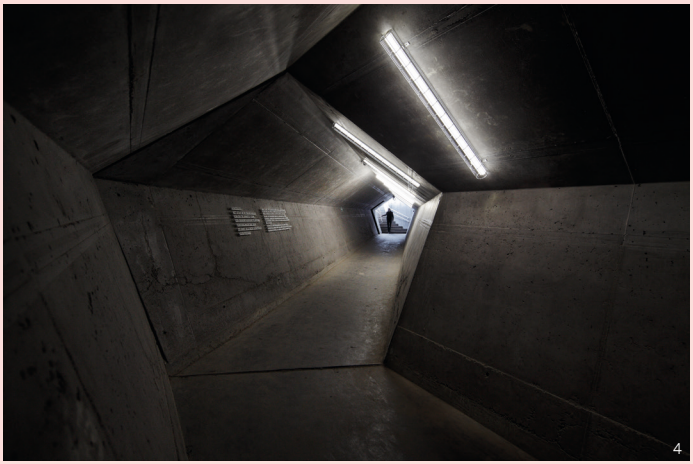


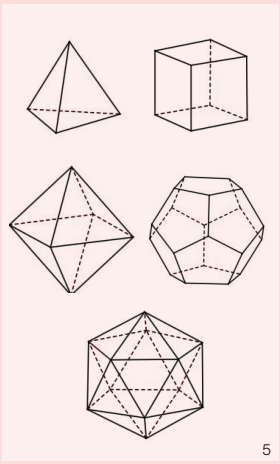
FR La maison pentagonale à Landskouter a été conçue en ajoutant un pignon supplémentaire à une maison classique à quatre pignons (deux pignons et deux pignons plats). C'est ainsi que l'on obtient la maison pentagonale.
Si l'on va plus loin et que l'on pense à une forme dont les faces sont uniquement pentagonales, on obtient un dodécaèdre. Combien de faces compte un dodécaèdre ?
Vous pouvez construire ces trois figures une seule fois : la maison à 4 pignons, celle à 5 pignons et le dodécaèdre. Le code couleur indique à quelle forme appartient le plan.

NL De vijfhoekige woning in Landskouter is ontworpen door aan een klassieke woning met vier gevels (twee puntgevels en twee vlakke gevels) een extra puntgevel toe te voegen. Zo ontstaat het vijfhoekige huis.
Als je een stapje verder gaat, en een vorm bedenkt met enkel vijfhoekige vlakken, dan krijg je een dodecaëder. Hoeveel vlakken tel je bij een dodecaëder?
Je kan deze drie figuren eens bouwen: de woning met 4 gevels, die met 5 gevels en de dodecaëder. De kleurcode toont bij welke vorm het vlakje hoort.

EN The pentagonal house in Landskouter was designed by adding an additional gable to a classic house with four gables (two gables and two flat gables). This created the pentagonal house.
If you go a step further, and invent a shape with only pentagonal faces, you get one dodecahedron. How many faces do you count in a dodecahedron?
You can build these three figures: the house with 4 facades, the one with 5 facades and the dodecahedron. The color code shows which shape the plane belongs to.







1 Maquette / Model Landskouter © NU architectuuratelier 2 Landskouter, NU architectuuratelier, © Stijn Bollaert 3 Fragment *Melancolia*, polyhedron, Albrecht Dürer 4 Pentagon tunnel, C-mine Expeditie, Genk © Stijn Bollaert 5 figures spatiales / ruimtelijke figuren / spatial figures

Make a Regular Pentagon

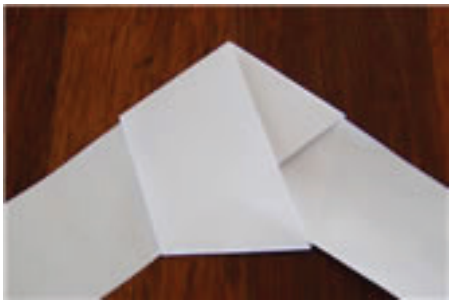
You can make a regular pentagon with a strip of paper!

Start with a long strip of paper, make sure it is the same width all along (if you want the pentagon to be regular):

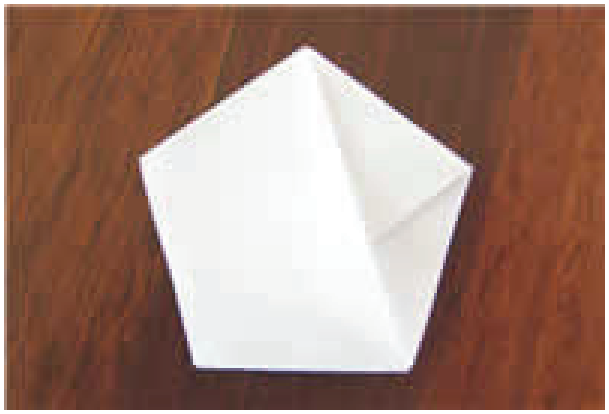
Make a “pretzel” knot with the paper.

Carefully tighten the knot while keeping the paper flat.

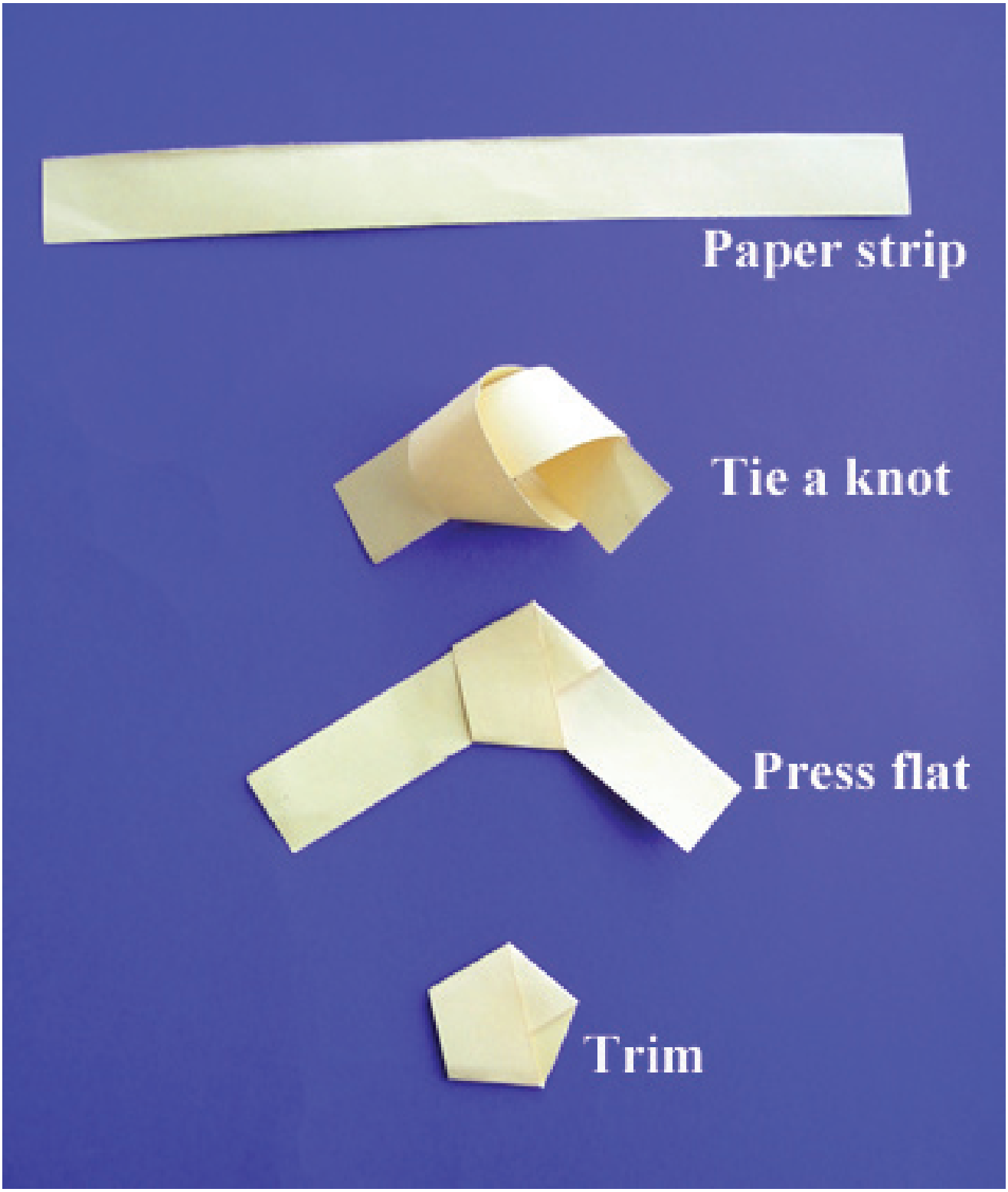
. . . . .

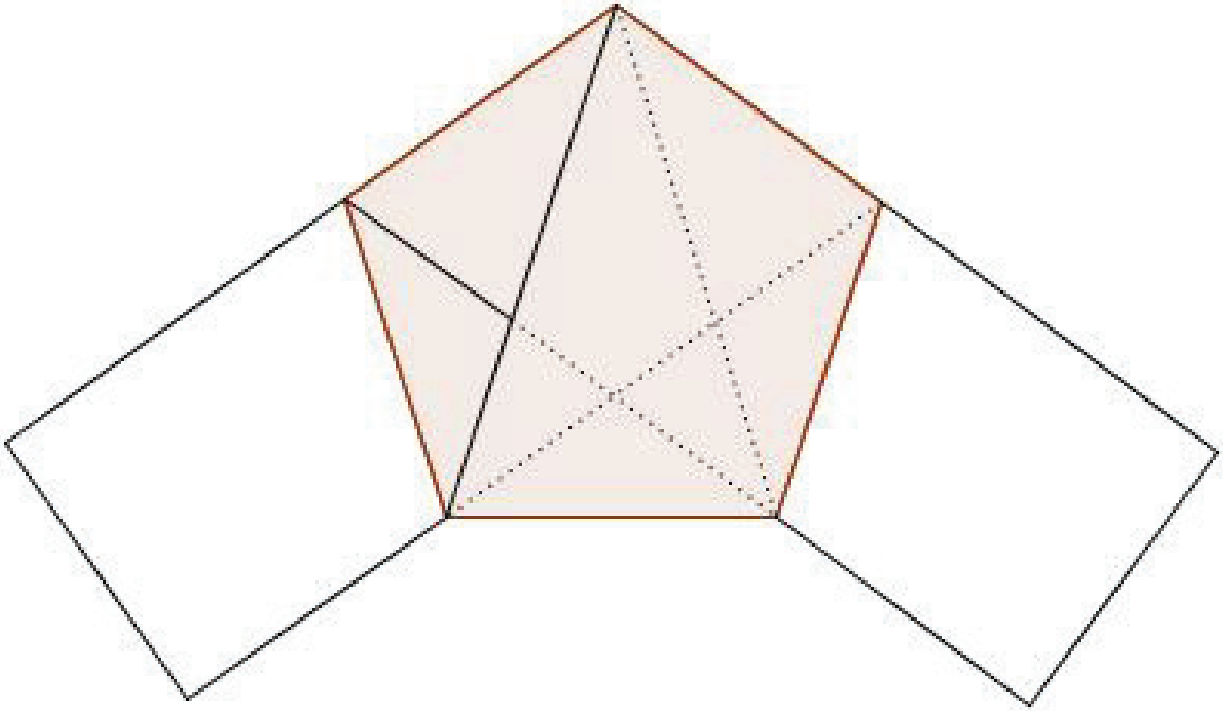


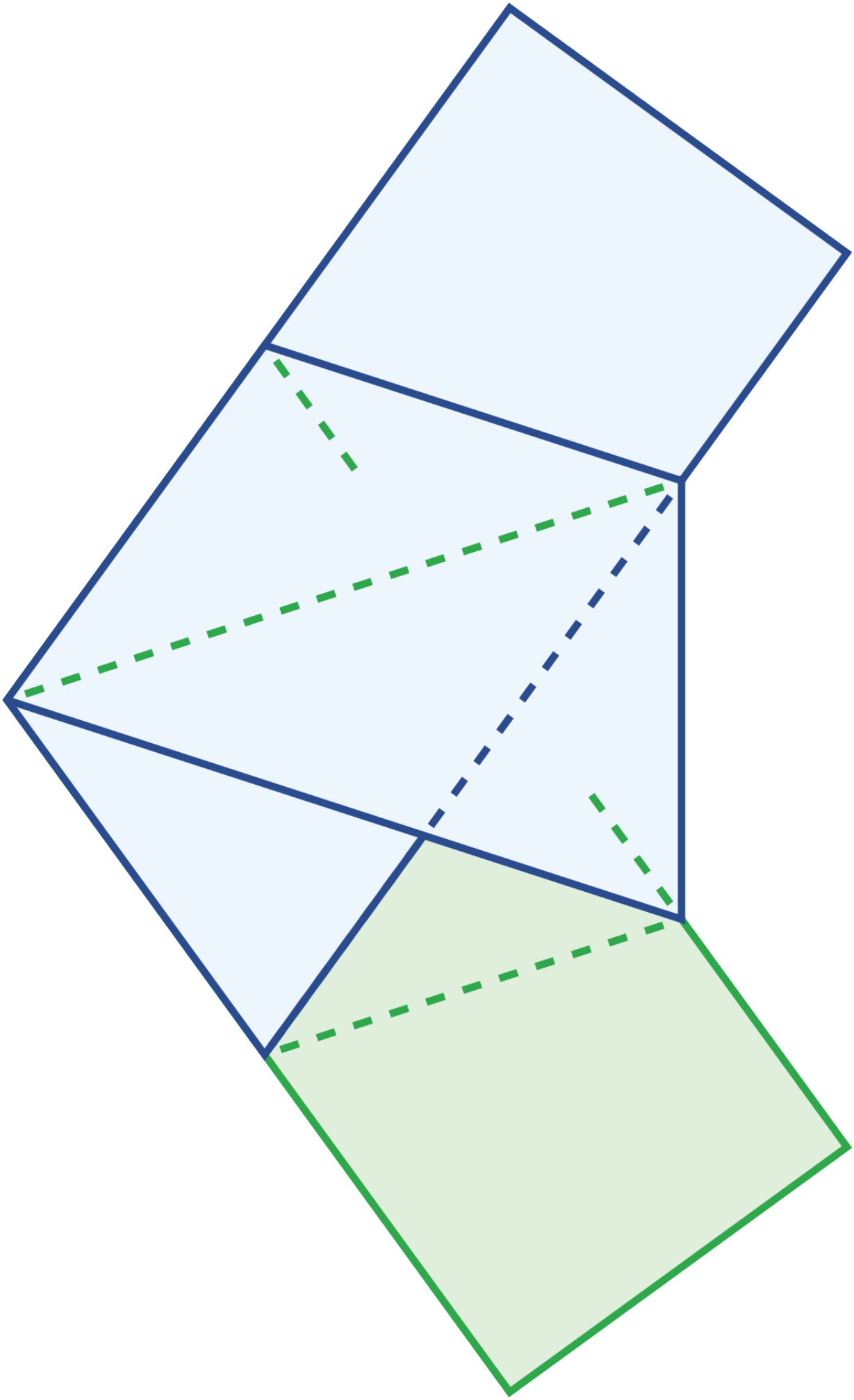
Trim off (or fold back) any excess.



All sides are now of equal lenght, and all angles should be the same too.

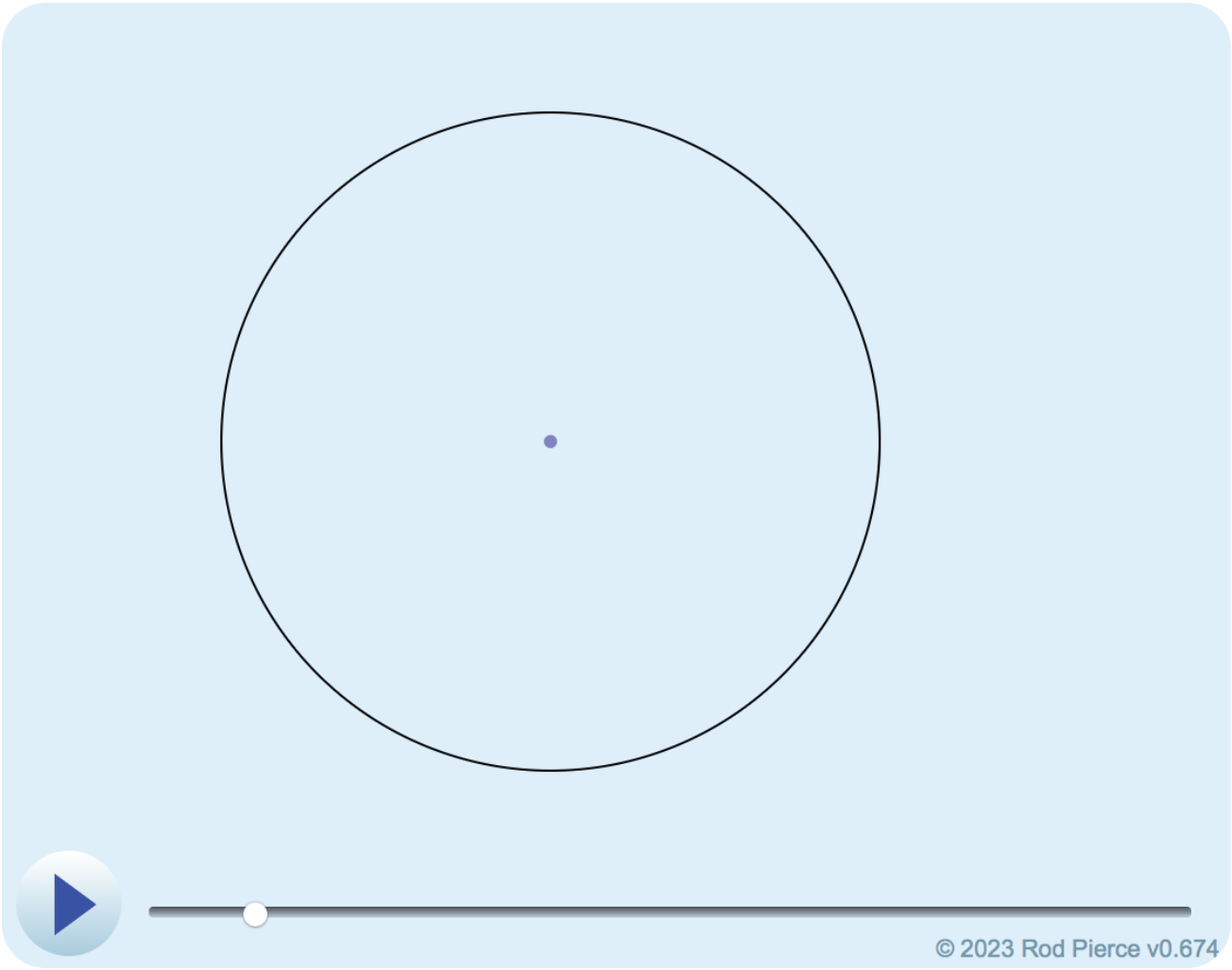

Paper strip
Tie a knot
Press flat
Trim





Pentagon

How to construct a Regular Pentagon
using just a compass and a straightedge



https://www.mathsisfun.com/geometry/construct-pentagon.html

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HOW TO CONSTRUCT A REGULAR PENTAGON

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02

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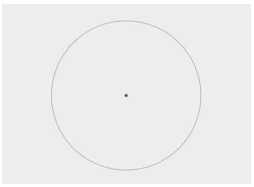

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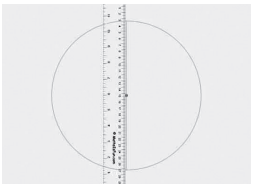

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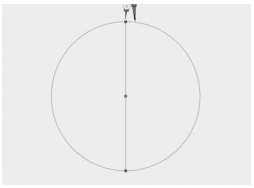

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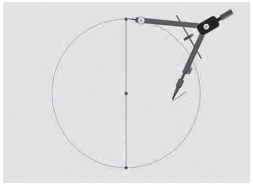

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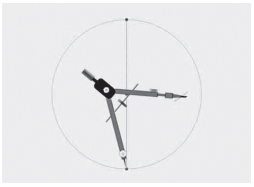

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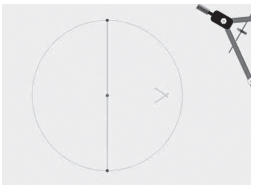

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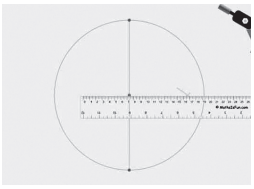

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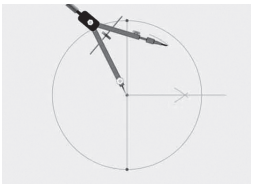

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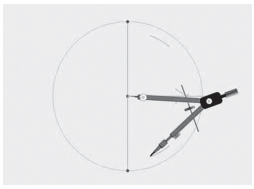

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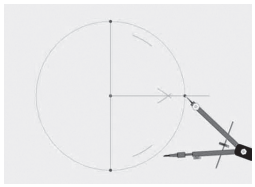

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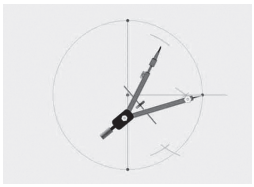

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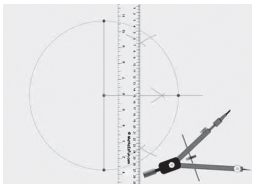

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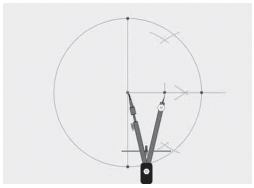

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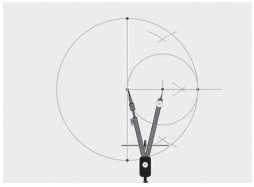

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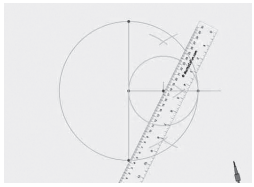

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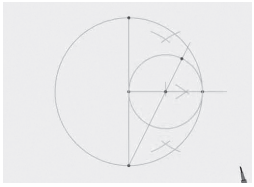

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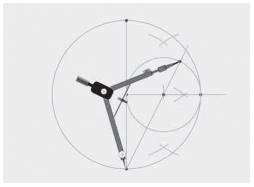

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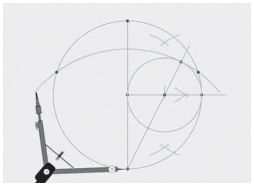

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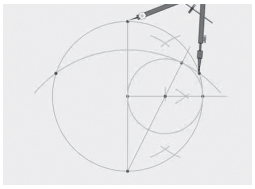

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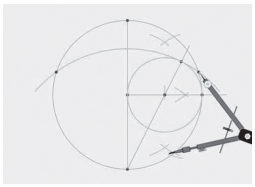

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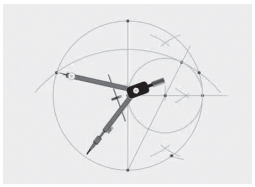

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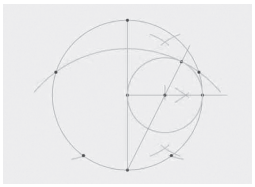

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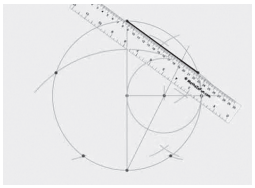

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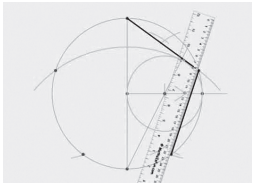

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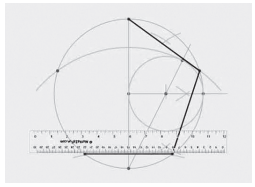

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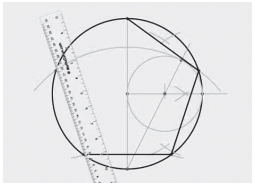

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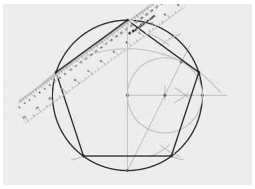

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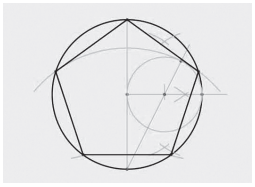
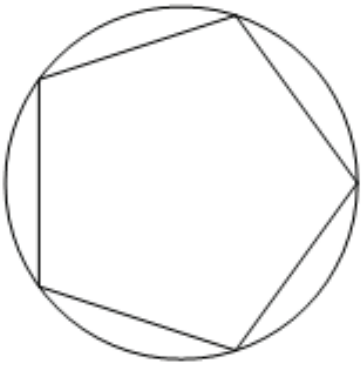


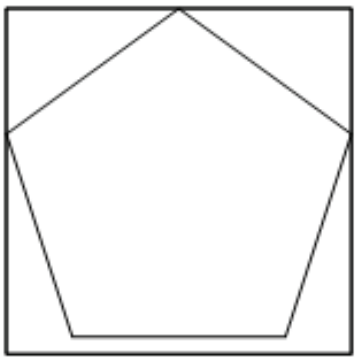
Fold a Pentagon from a Circle



Here is a way to fold a pentagon from a circle that mimics the steps used in a traditional compass and straightedge construction. I took this from Oschene's marvelous blog of origami. The compass and straightedge construction isn't intuitive, but I think that folding removes some of the complexities. It seems like folding such things as angle bisectors and perpendicular lines is more intuitive than constructing them.

https://www.cutoutfoldup.com/132-fold-a-pentagon-from-a-circle.php

Fold a Regular Pentagon

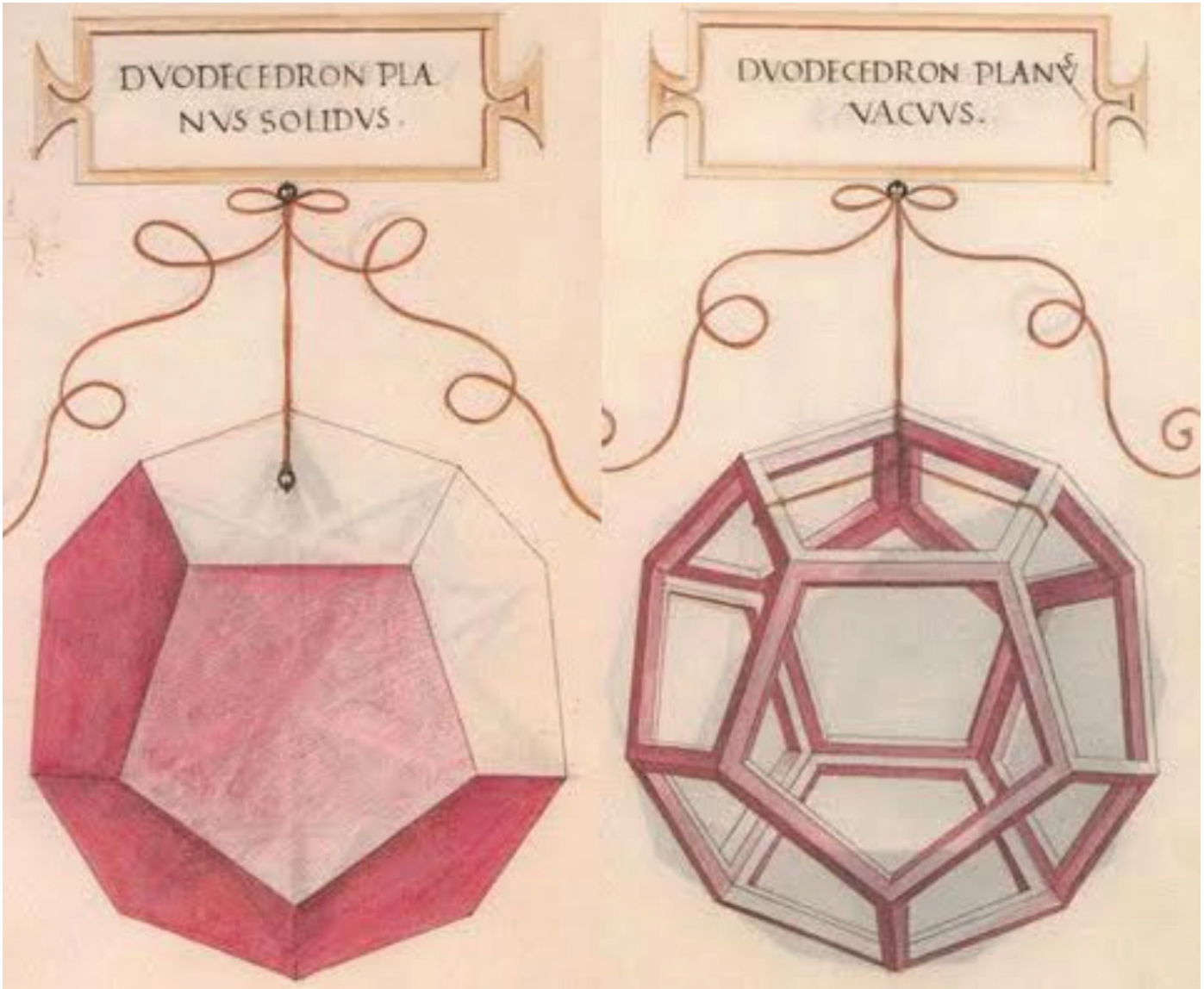


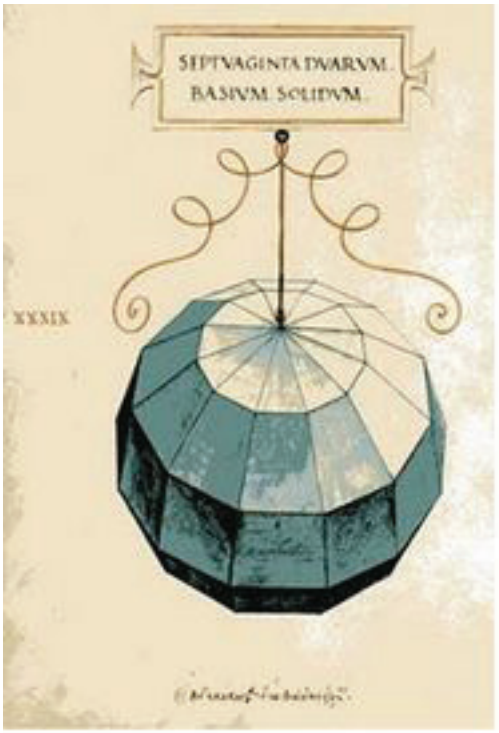
A square and a pentagon seem to inhabit different worlds. The square's right angles seem incompatible with the pentagon's interesting shape. At first glance it doesn't seem likely that you could fold one from the other. The saying "You can't get there from here." comes to mind. Yet, through a shared connection with the golden mean, you can create a regular pentagon from a square piece of paper.

https://www.cutoutfoldup.com/105-fold-a-regular-pentagon.php

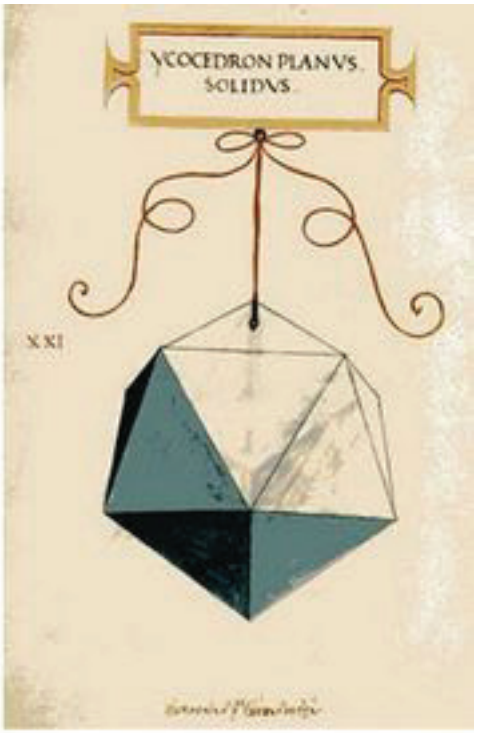
Jacopo de’ Barbari: Portrait of Luca Pacioli

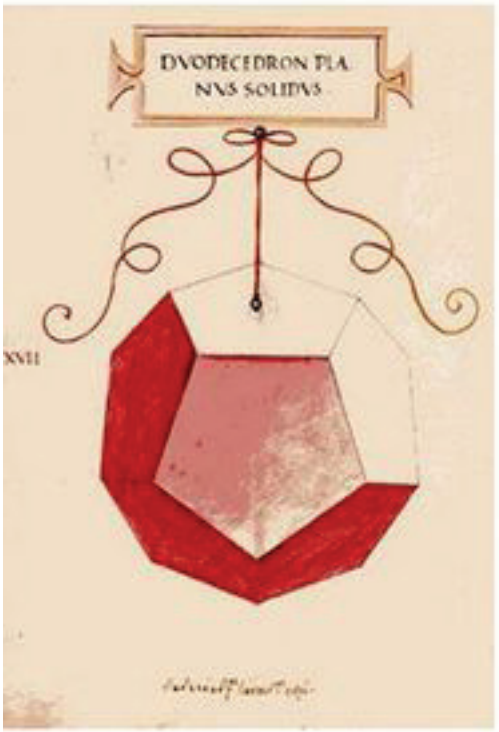
https://commons.wikimedia.org/wiki/File:Pacioli.jpg


DVODECEDRON PLA
NVS SOLIDVS.
DVODECEDRON PLANV
VACVVS.


SEPTVAGINTA DVARVM
BASIVM SOLIDVM
XXXIX

VIGINTI SEX BASIVM
PLANVS SOLIDVS
XXXV


YCOCEDRON PLANVS
SOLIDVS
XXI


DVODECEDRON PLA
NVS SOLIDVS
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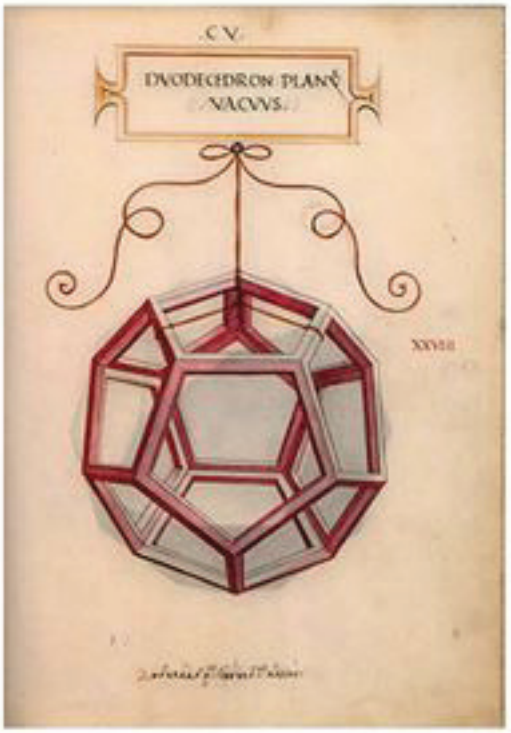
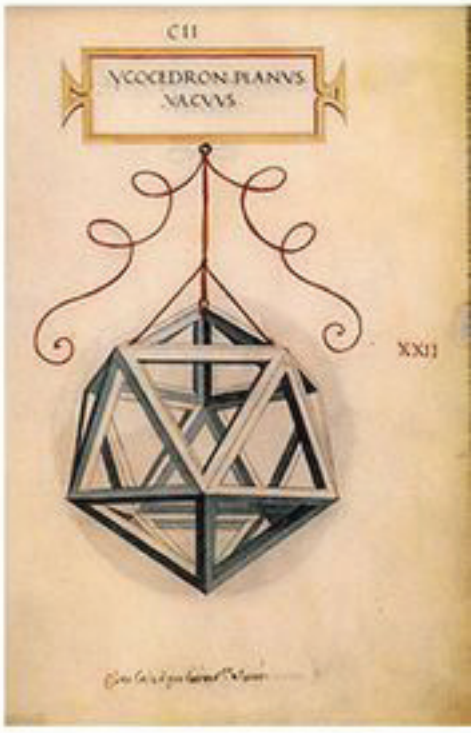
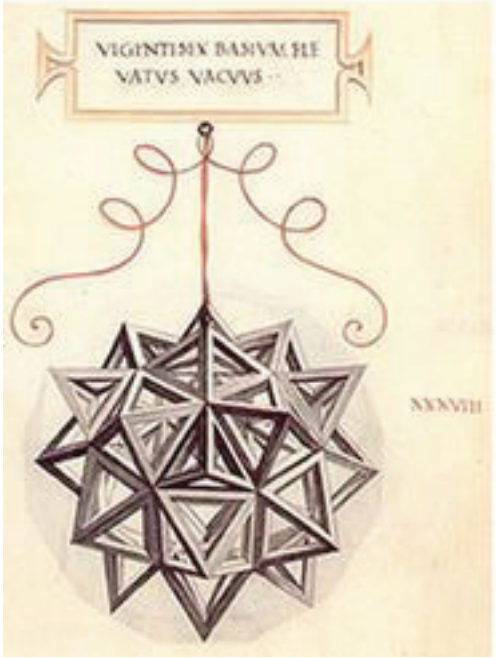
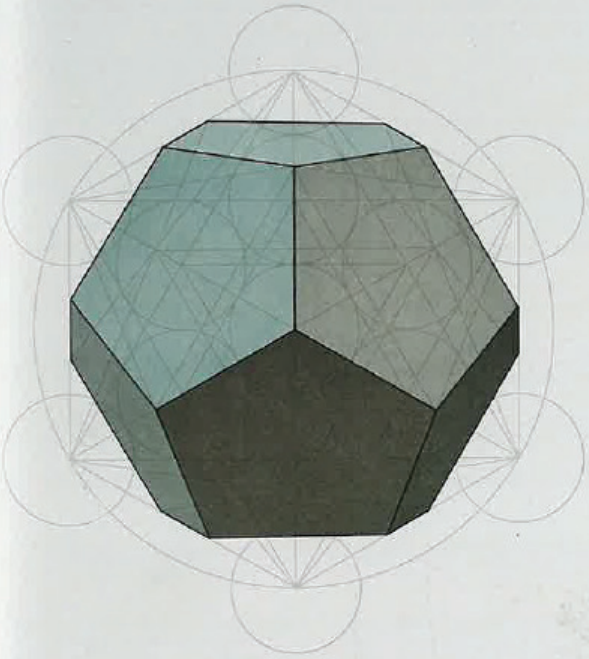

CV
DVODECEDRON PLANE
VACVVS
XXVIII

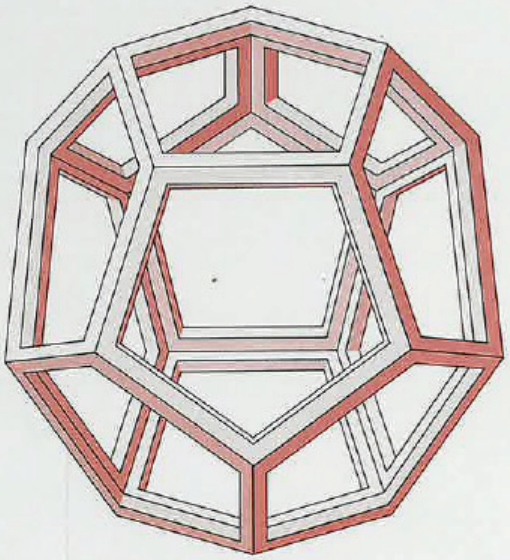

CII
YCOCEDRON PLANVS
VACVVS
XXII


VIGINTISEX BASIVM LE
VATVS VACVVS
XXXVII

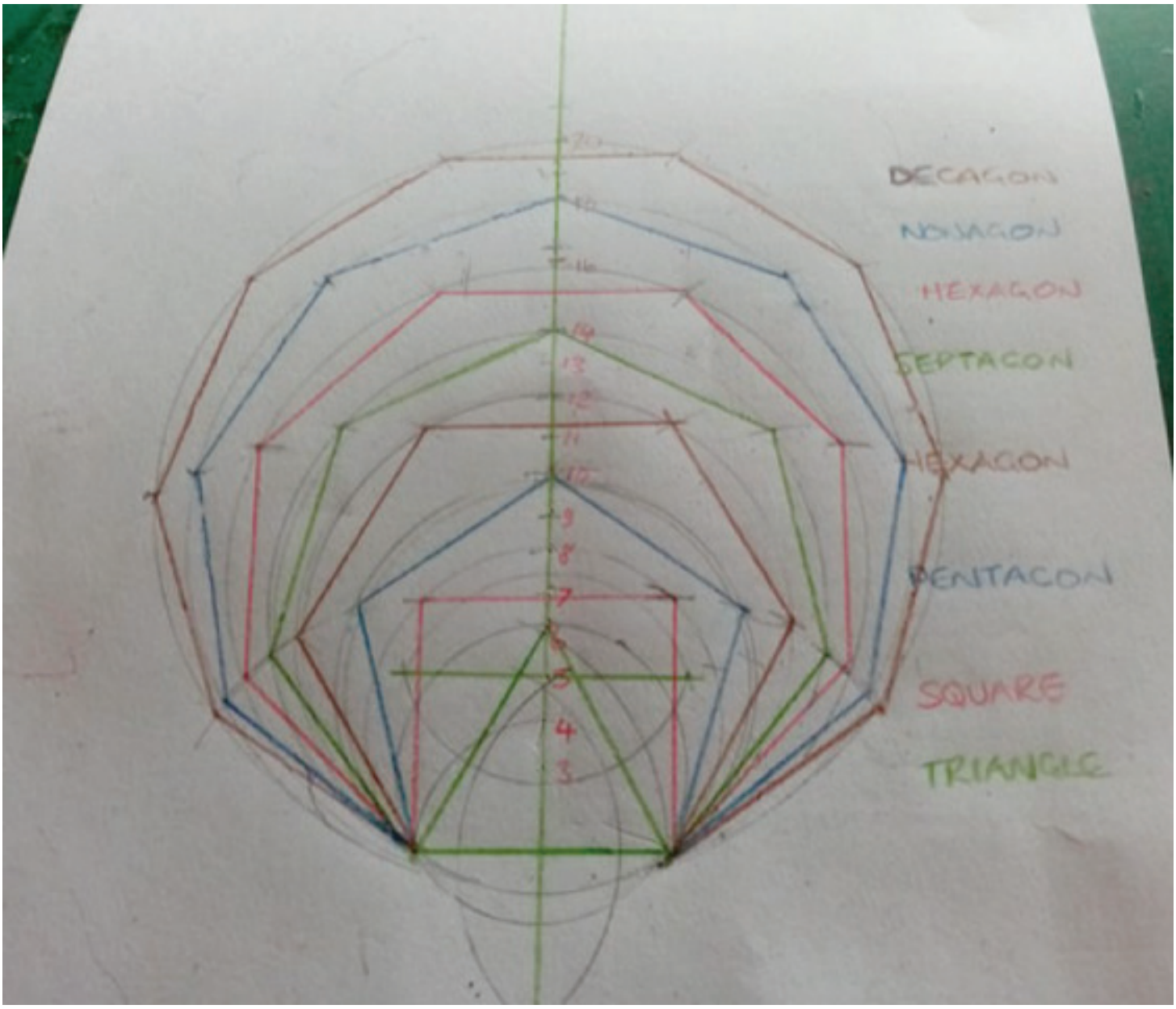
VIGINTISEX BASIVM
PLANVS VACVVS
XXXVI

SEPTVAGINTA DVARVM
BASIVM VACVVM
XL





It is a strange phenomenon to have so little to say about the part of *The Elements* that elicits the most visceral feelings within me. I suppose that if there is ever a moment to be quiet, it is when you find yourself in the presence of a dodecahedron (or two). In its monumentality, its elegant balance of static activity, the dodecahedron is not to be *lectured on* but *listened to*. What I hear when I listen is nothing but a deep, resonating silence. It offers no commentary. It exists, it is undeniable, and whatever meaning a dodecahedron may contain is bound up within itself, inaccessible and, ultimately, unnecessary. ¶Similarly to how my utopian towns eased my adolescent mind, when I see a dodecahedron I am overcome with calm. I suppose it is feelings such as these that motivate people to seek out a deeper truth concealed within form. The greatest truth that I have discerned from the dodecahedron is that it means absolutely nothing beyond the simple, irreducible fact of its own existence. It is precisely what it is, without pretense or apology. There are few things, in my experience, that can claim so much, so eloquently.



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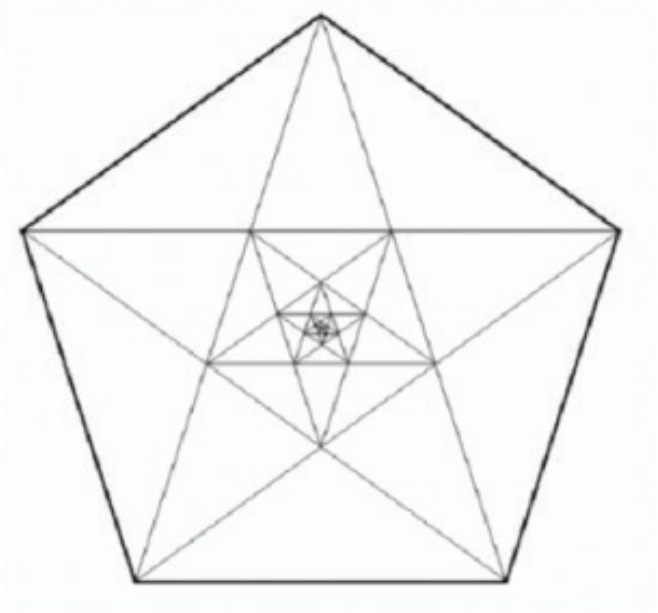
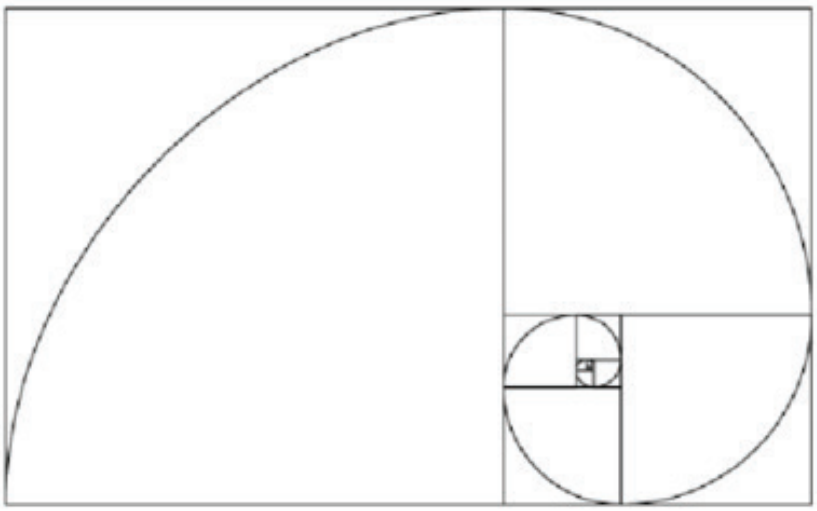
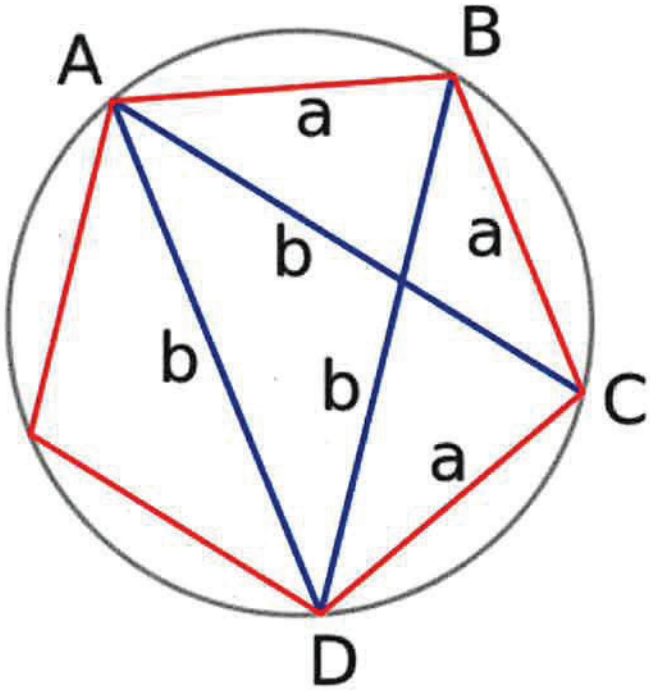


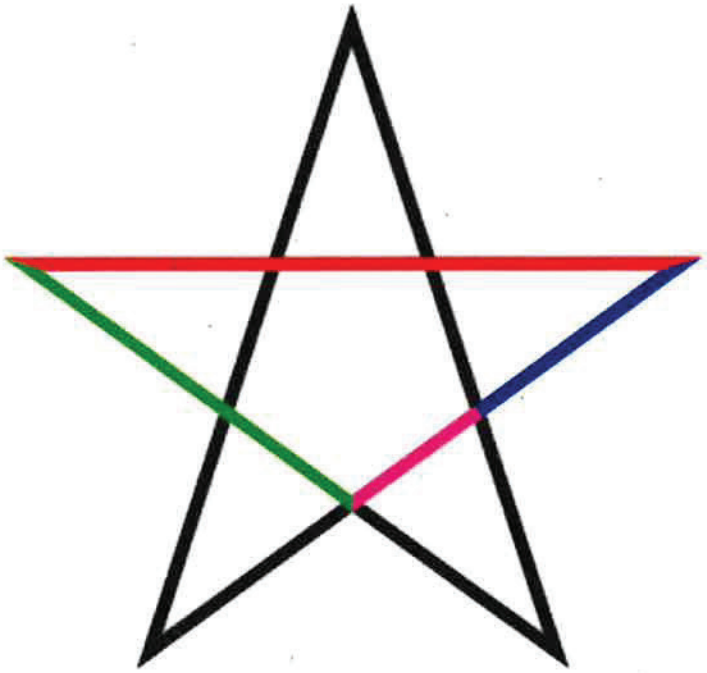


Left: The diagonals of a pentagon form a pentagram. The intersections of the pentagram form a smaller pentagon. Draw again the diagonals of the smaller pentagon, ad infinitum. Right: Draw a square inside a golden rectangle. Inside the smaller rectangle, draw another square, ad infinitum. A logarithmic spiral is formed by linking the opposed corners of the squares by a continuous curved line).

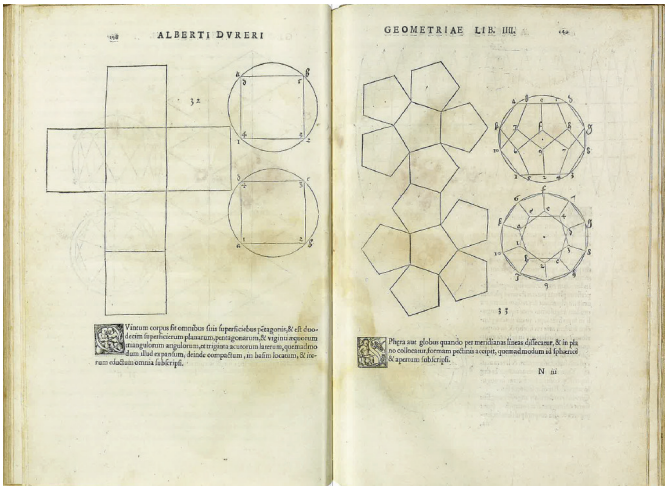
The pentagram and pentagon shapes also hold the golden ratio.

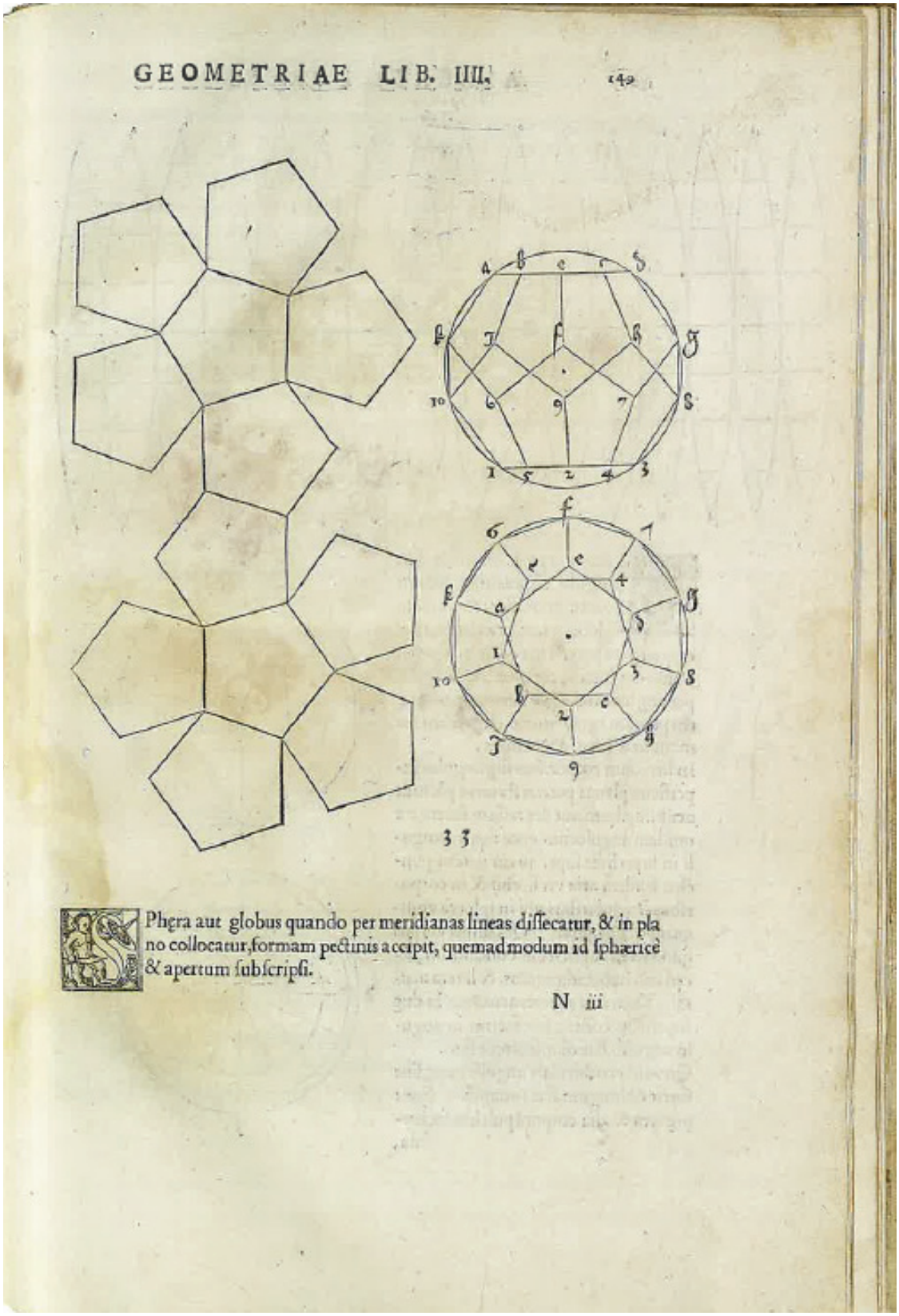


"Ptolemy Pentagon" by en:User:Dicklyon - Own work by en:User:Dicklyon. Licensed under Public Domain via Wikimedia Commons



"Pentagram-phi" by Jamiemichelle at English Wikipedia - Transferred from en.wikipedia to Commons.. Licensed under Public Domain via Wikimedia Commons





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Phęra aut globus quando per meridianas lineas dissecatur, & in plano collocatur, formam pectinis accipit, quemadmodum id sphæricè & apertum subscripsi.