Ὅροι.

αʹ. Ἴσοι κύκλοι εἰσίν, ὧν αἱ διάμετροι ἴσαι εἰσίν, ἢ ὧν αἱ ἐκ τῶν κέντρων ἴσαι εἰσίν.

βʹ. Εὐθεῖα κύκλου ἐφάπτεσθαι λέγεται, ἥτις ἁπτομένη τοῦ κύκλου καὶ ἐκβαλλομένη οὐ τέμνει τὸν κύκλον.

γʹ. Κύκλοι ἐφάπτεσθαι ἀλλήλων λέγονται οἵτινες ἁπτόμενοι ἀλλήλων οὐ τέμνουσιν ἀλλήλους.

δʹ. Ἐν κύκλῳ ἴσον ἀπέχειν ἀπὸ τοῦ κέντρου εὐθεῖαι λέγονται, ὅταν αἱ ἀπὸ τοῦ κέντρου ἐπ᾽ αὐτὰς κάθετοι ἀγόμεναι ἴσαι ὦσιν.

εʹ. Μεῖζον δὲ ἀπέχειν λέγεται, ἐφ᾽ ἣν ἡ μείζων κάθετος πίπτει.

ϛʹ. Τμῆμα κύκλου ἐστὶ τὸ περιεχόμενον σχῆμα ὑπό τε εὐθείας καὶ κύκλου περιφερείας.

ζʹ. Τμήματος δὲ γωνία ἐστὶν ἡ περιεχομένη ὑπό τε εὐθείας καὶ κύκλου περιφερείας.

ηʹ. Ἐν τμήματι δὲ γωνία ἐστίν, ὅταν ἐπὶ τῆς περιφερείας τοῦ τμήματος ληφθῇ τι σημεῖον καὶ ἀπ᾽ αὐτοῦ ἐπὶ τὰ πέρατα τῆς εὐθείας, ἥ ἐστι βάσις τοῦ τμήματος, ἐπιζευχθῶσιν εὐθεῖαι, ἡ περιεχομένη γωνία ὑπὸ τῶν ἐπιζευχθεισῶν εὐθειῶν.

θʹ. Ὅταν δὲ αἱ περιέχουσαι τὴν γωνίαν εὐθεῖαι ἀπολαμβάνωσί τινα περιφέρειαν, ἐπ᾽ ἐκείνης λέγεται βεβηκέναι ἡ γωνία.

ιʹ. Τομεὺς δὲ κύκλου ἐστίν, ὅταν πρὸς τῷ κέντρῳ τοῦ κύκλου συσταθῇ γωνία, τὸ περιεχόμενον σχῆμα ὑπό τε τῶν τὴν γωνίαν περιεχουσῶν εὐθειῶν καὶ τῆς ἀπολαμβανομένης ὑπ᾽ αὐτῶν περιφερείας.

ιαʹ. Ὅμοια τμήματα κύκλων ἐστὶ τὰ δεχόμενα γωνίας ἴσας, ἢ ἐν οἷς αἱ γωνίαι ἴσαι ἀλλήλαις εἰσίν.

Definitions

1. Equal circles are (circles) whose diameters are equal, or whose (distances) from the centers (to the circumferences) are equal (i.e., whose radii are equal).

2. A straight-line said to touch a circle is any (straight-line) which, meeting the circle and being produced, does not cut the circle.

3. Circles said to touch one another are any (circles) which, meeting one another, do not cut one another.

4. In a circle, straight-lines are said to be equally far from the center when the perpendiculars drawn to them from the center are equal.

5. And (that straight-line) is said to be further (from the center) on which the greater perpendicular falls (from the center).

6. A segment of a circle is the figure contained by a straight-line and a circumference of a circle.

7. And the angle of a segment is that contained by a straight-line and a circumference of a circle.

8. And the angle in a segment is the angle contained by the joined straight-lines, when any point is taken on the circumference of a segment, and straight-lines are joined from it to the ends of the straight-line which is the base of the segment.

9. And when the straight-lines containing an angle cut off some circumference, the angle is said to stand upon that (circumference).

10. And a sector of a circle is the figure contained by the straight-lines surrounding an angle, and the circumference cut off by them, when the angle is constructed at the center of a circle.

11. Similar segments of circles are those accepting equal angles, or in which the angles are equal to one another.

αʹ.

Τοῦ δοθέντος κύκλου τὸ κέντρον εὑρεῖν.

Ἔστω ὁ δοθεὶς κύκλος ὁ ΑΒΓ· δεῖ δὴ τοῦ ΑΒΓ κύκλου τὸ κέντρον εὑρεῖν.

Διήχθω τις εἰς αὐτόν, ὡς ἔτυχεν, εὐθεῖα ἡ ΑΒ, καὶ τετμήσθω δίχα κατὰ τὸ Δ σημεῖον, καὶ ἀπὸ τοῦ Δ τῇ ΑΒ πρὸς ὀρθὰς ἤχθω ἡ ΔΓ καὶ διήχθω ἐπὶ τὸ Ε, καὶ τετμήσθω ἡ ΓΕ δίχα κατὰ τὸ Ζ· λέγω, ὅτι τὸ Ζ κέντρον ἐστὶ τοῦ ΑΒΓ [κύκλου].

Μὴ γάρ, ἀλλ᾽ εἰ δυνατόν, ἔστω τὸ Η, καὶ ἐπεζεύχθωσαν αἱ ΗΑ, ΗΔ, ΗΒ. καὶ ἐπεὶ ἴση ἐστὶν ἡ ΑΔ τῇ ΔΒ, κοινὴ δὲ ἡ ΔΗ, δύο δὴ αἱ ΑΔ, ΔΗ δύο ταῖς ΗΔ, ΔΒ ἴσαι εἰσὶν ἑκατέρα ἑκατέρᾳ· καὶ βάσις ἡ ΗΑ βάσει τῇ ΗΒ ἐστιν ἴση· ἐκ κέντρου γάρ· γωνία ἄρα ἡ ὑπὸ ΑΔΗ γωνίᾳ τῇ ὑπὸ ΗΔΒ ἴση ἐστίν.

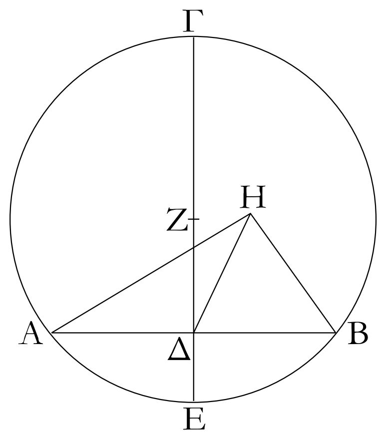
Proposition 1

To find the center of a given circle.

Let ABC be the given circle. So it is required to find the center of circle ABC.

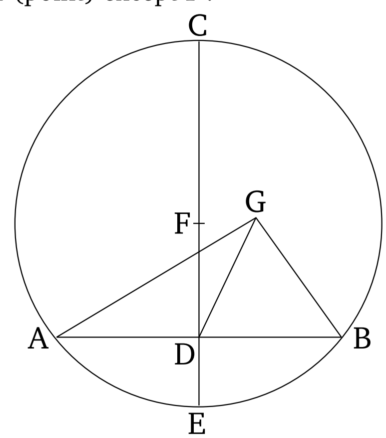
Let some straight-line AB have been drawn through (ABC), at random, and let (AB) have been cut in half at point D [Prop. 1.9]. And let DC have been drawn from D, at right-angles to AB [Prop. 1.11]. And let (CD) have been drawn through to E. And let CE have been cut in half at F [Prop. 1.9]. I say that (point) F is the center of the [circle] ABC.

For (if) not then, if possible, let G (be the center of the circle), and let GA, GD, and GB have been joined. And since AD is equal to DB, and DG (is) common, the two ὅταν δὲ εὐθεῖα ἐπ᾿ εὐθεῖαν σταθεῖσα τὰς ἐφεξῆς γωνίας ἴσας ἀλλήλαις ποιῇ, ὀρθὴ ἑκατέρα τῶν ἴσων γωνιῶν ἐστιν· ὀρθὴ ἄρα ἐστὶν ἡ ὑπὸ ΗΔΒ. ἐστὶ δὲ καὶ ἡ ὑπὸ ΖΔΒ ὀρθή· ἴση ἄρα ἡ ὑπὸ ΖΔΒ τῇ ὑπὸ ΗΔΒ, ἡ μείζων τῇ ἐλάττονι· ὅπερ ἐστὶν ἀδύνατον. οὐκ ἄρα τὸ Η κέντρον ἐστὶ τοῦ ΑΒΓ κύκλου. ὁμοίως δὴ δείξομεν, ὅτι οὐδ᾿ ἄλλο τι πλὴν τοῦ Ζ.



Τὸ Ζ ἄρα σημεῖον κέντρον ἐστὶ τοῦ ΑΒΓ [κύκλου].

(straight-lines) AD, DG are equal to the two (straight-lines) BD, DG,† respectively. And the base GA is equal to the base GB. For (they are both) radii. Thus, angle ADG is equal to angle GDB [Prop. 1.8]. And when a straight-line stood upon (another) straight-line make adjacent angles (which are) equal to one another, each of the equal angles is a right-angle [Def. 1.10]. Thus, GDB is a right-angle. And FDB is also a right-angle. Thus, FDB (is) equal to GDB, the greater to the lesser. The very thing is impossible. Thus, (point) G is not the center of the circle ABC. So, similarly, we can show that neither is any other (point) except F.



Thus, point F is the center of the [circle] ABC.

Πόρισμα.

Ἐκ δὴ τούτου φανερόν, ὅτι ἐὰν ἐν κύκλῳ εὐθεῖά τις εὐθεῖάν τινα δίχα καὶ πρὸς ὀρθὰς τέμνῃ, ἐπὶ τῆς τεμνούσης ἐστὶ τὸ κέντρον τοῦ κύκλου. — ὅπερ ἔδει ποιῆσαι.

Corollary

So, from this, (it is) manifest that if any straight-line in a circle cuts any (other) straight-line in half, and at right-angles, then the center of the circle is on the former (straight-line). — (Which is) the very thing it was required to do.

† The Greek text has "GD, DB", which is obviously a mistake.

β΄.

Ἐὰν κύκλου ἐπὶ τῆς περιφερείας ληφθῇ δύο τυχόντα σημεῖα, ἡ ἐπὶ τὰ σημεῖα ἐπιζευγνυμένη εὐθεῖα ἐντὸς πεσεῖται τοῦ κύκλου.

Ἔστω κύκλος ὁ ΑΒΓ, καὶ ἐπὶ τῆς περιφερείας αὐτοῦ εἰλήφθω δύο τυχόντα σημεῖα τὰ Α, Β· λέγω, ὅτι ἡ ἀπὸ τοῦ Α ἐπὶ τὸ Β ἐπιζευγνυμένη εὐθεῖα ἐντὸς πεσεῖται τοῦ κύκλου.

Μὴ γάρ, ἀλλ᾿ εἰ δυνατόν, πιπτέτω ἐκτὸς ὡς ἡ ΑΕΒ, καὶ εἰλήφθω τὸ κέντρον τοῦ ΑΒΓ κύκλου, καὶ ἔστω τὸ Δ, καὶ ἐπεζεύχθωσαν αἱ ΔΑ, ΔΒ, καὶ διήχθω ἡ ΔΖΕ.

Ἐπεὶ οὖν ἴση ἐστὶν ἡ ΔΑ τῇ ΔΒ, ἴση ἄρα καὶ γωνία ἡ ὑπὸ ΔΑΕ τῇ ὑπὸ ΔΒΕ· καὶ ἐπεὶ τριγώνου τοῦ ΔΑΕ μία

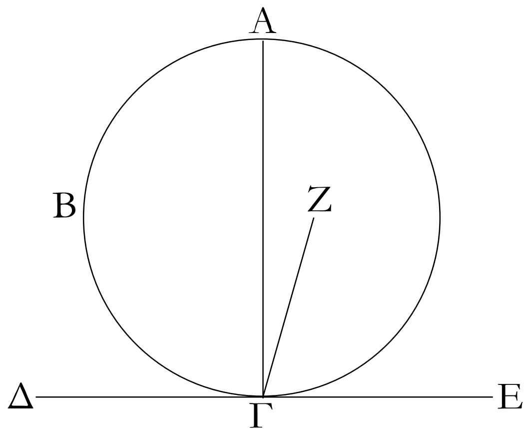
Proposition 2

If two points are taken at random on the circumference of a circle then the straight-line joining the points will fall inside the circle.

Let ABC be a circle, and let two points A and B have been taken at random on its circumference. I say that the straight-line joining A to B will fall inside the circle.

For (if) not then, if possible, let it fall outside (the circle), like AEB (in the figure). And let the center of the circle ABC have been found [Prop. 3.1], and let it be (at point) D. And let DA and DB have been joined, and let DFE have been drawn through.

Therefore, since DA is equal to DB, the angle DAE

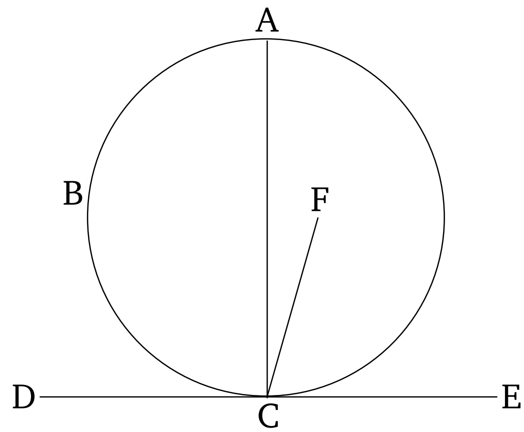


Μὴ γάρ, ἀλλ᾽ εἰ δυνατόν, ἔστω τὸ Ζ, καὶ ἐπεζεύχθω ἡ ΓΖ.

Ἐπεὶ [οὖν] κύκλου τοῦ ΑΒΓ ἐφάπτεταί τις εὐθεῖα ἡ ΔΕ, ἀπὸ δὲ τοῦ κέντρου ἐπὶ τὴν ἁφὴν ἐπέζευκται ἡ ΖΓ, ἡ ΖΓ ἄρα κάθετός ἐστιν ἐπὶ τὴν ΔΕ· ὀρθὴ ἄρα ἐστὶν ἡ ὑπὸ ΖΓΕ. ἐστὶ δὲ καὶ ἡ ὑπὸ ΑΓΕ ὀρθή· ἴση ἄρα ἐστὶν ἡ ὑπὸ ΖΓΕ τῇ ὑπὸ ΑΓΕ ἡ ἐλάττων τῇ μείζονι· ὅπερ ἐστὶν ἀδύνατον. οὐκ ἄρα τὸ Ζ κέντρον ἐστὶ τοῦ ΑΒΓ κύκλου. ὁμοίως δὴ δείξομεν, ὅτι οὐδ᾽ ἄλλο τι πλὴν ἐπὶ τῆς ΑΓ.

Ἐὰν ἄρα κύκλου ἐφάπτηταί τις εὐθεῖα, ἀπὸ δὲ τῆς ἁφῆς τῇ ἐφαπτομένῃ πρὸς ὀρθὰς εὐθεῖα γραμμὴ ἀχθῇ, ἐπὶ τῆς ἀχθείσης ἔσται τὸ κέντρον τοῦ κύκλου· ὅπερ ἔδει δεῖξαι.

angles to DE [Prop. 1.11]. I say that the center of the circle is on AC.



For (if) not, if possible, let F be (the center of the circle), and let CF have been joined.

[Therefore], since some straight-line DE touches the circle ABC, and FC has been joined from the center to the point of contact, FC is thus perpendicular to DE [Prop. 3.18]. Thus, FCE is a right-angle. And ACE is also a right-angle. Thus, FCE is equal to ACE, the lesser to the greater. The very thing is impossible. Thus, F is not the center of circle ABC. So, similarly, we can show that neither is any (point) other (than one) on AC.

Thus, if some straight-line touches a circle, and a straight-line is drawn from the point of contact, at right-angles to the tangent, then the center (of the circle) will be on the (straight-line) so drawn. (Which is) the very thing it was required to show.

κʹ.

Ἐν κύκλῳ ἡ πρὸς τῷ κέντρῳ γωνία διπλασίων ἐστὶ τῆς πρὸς τῇ περιφερείᾳ, ὅταν τὴν αὐτὴν περιφέρειαν βάσιν ἔχωσιν αἱ γωνίαι.

Ἔστω κύκλος ὁ ΑΒΓ, καὶ πρὸς μὲν τῷ κέντρῳ αὐτοῦ γωνία ἔστω ἡ ὑπὸ ΒΕΓ, πρὸς δὲ τῇ περιφερείᾳ ἡ ὑπὸ ΒΑΓ, ἐχέτωσαν δὲ τὴν αὐτὴν περιφέρειαν βάσιν τὴν ΒΓ· λέγω, ὅτι διπλασίων ἐστὶν ἡ ὑπὸ ΒΕΓ γωνία τῆς ὑπὸ ΒΑΓ.

Ἐπιζευχθεῖσα γὰρ ἡ ΑΕ διήχθω ἐπὶ τὸ Ζ.

Ἐπεὶ οὖν ἴση ἐστὶν ἡ ΕΑ τῇ ΕΒ, ἴση καὶ γωνία ἡ ὑπὸ ΕΑΒ τῇ ὑπὸ ΕΒΑ· αἱ ἄρα ὑπὸ ΕΑΒ, ΕΒΑ γωνίαι τῆς ὑπὸ ΕΑΒ διπλασίους εἰσίν. ἴση δὲ ἡ ὑπὸ ΒΕΖ ταῖς ὑπὸ ΕΑΒ, ΕΒΑ· καὶ ἡ ὑπὸ ΒΕΖ ἄρα τῆς ὑπὸ ΕΑΒ ἐστι διπλῆ. διὰ τὰ αὐτὰ δὴ καὶ ἡ ὑπὸ ΖΕΓ τῆς ὑπὸ ΕΑΓ ἐστι διπλῆ. ὅλη ἄρα ἡ ὑπὸ ΒΕΓ ὅλης τῆς ὑπὸ ΒΑΓ ἐστι διπλῆ.

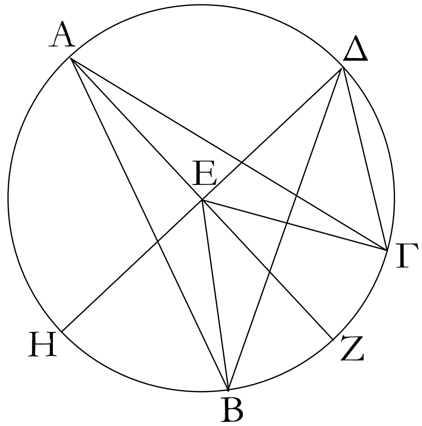
Proposition 20

In a circle, the angle at the center is double that at the circumference, when the angles have the same circumference base.

Let ABC be a circle, and let BEC be an angle at its center, and BAC (one) at (its) circumference. And let them have the same circumference base BC. I say that angle BEC is double (angle) BAC.

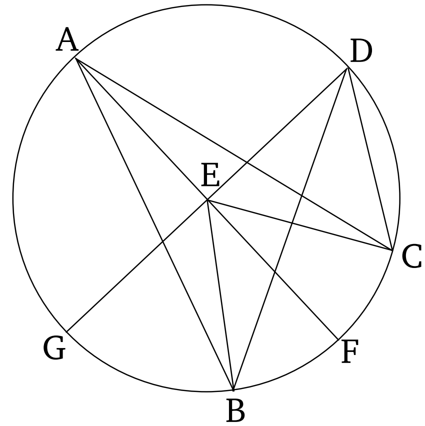
For being joined, let AE have been drawn through to F.

Therefore, since EA is equal to EB, angle EAB (is) also equal to EBA [Prop. 1.5]. Thus, angle EAB and EBA is double (angle) EAB. And BEF (is) equal to EAB and EBA [Prop. 1.32]. Thus, BEF is also double EAB. So, for the same (reasons), FEC is also double EAC. Thus, the whole (angle) BEC is double the whole (angle) BAC.



Κεκλάσθω δὴ πάλιν, καὶ ἔστω ἑτέρα γωνία ἡ ὑπὸ ΒΔΓ, καὶ ἐπιζευχθεῖσα ἡ ΔΕ ἐκβεβλήσθω ἐπὶ τὸ Η. ὁμοίως δὴ δείξομεν, ὅτι διπλῆ ἐστιν ἡ ὑπὸ ΗΕΓ γωνία τῆς ὑπὸ ΕΔΓ, ὧν ἡ ὑπὸ ΗΕΒ διπλῆ ἐστι τῆς ὑπὸ ΕΔΒ· λοιπὴ ἄρα ἡ ὑπὸ ΒΕΓ διπλῆ ἐστι τῆς ὑπὸ ΒΔΓ.

Ἐν κύκλῳ ἄρα ἡ πρὸς τῷ κέντρῳ γωνία διπλασίων ἐστὶ τῆς πρὸς τῇ περιφερείᾳ, ὅταν τὴν αὐτὴν περιφέρειαν βάσιν ἔχωσιν [αἱ γωνίαι]· ὅπερ ἔδει δεῖξαι.

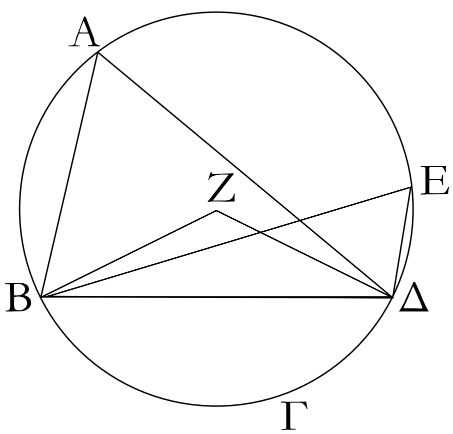


So let another (straight-line) have been inflected, and let there be another angle, BDC. And DE being joined, let it have been produced to G. So, similarly, we can show that angle GEC is double EDC, of which GEB is double EDB. Thus, the remaining (angle) BEC is double the (remaining angle) BDC.

Thus, in a circle, the angle at the center is double that at the circumference, when [the angles] have the same circumference base. (Which is) the very thing it was required to show.

κα΄.

Ἐν κύκλῳ αἱ ἐν τῷ αὐτῷ τμήματι γωνίαι ἴσαι ἀλλήλαις εἰσίν.



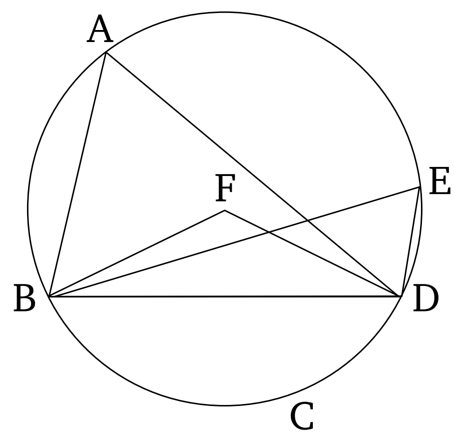
Ἔστω κύκλος ὁ ΑΒΓΔ, καὶ ἐν τῷ αὐτῷ τμήματι τῷ ΒΑΕΔ γωνίαι ἔστωσαν αἱ ὑπὸ ΒΑΔ, ΒΕΔ· λέγω, ὅτι αἱ ὑπὸ ΒΑΔ, ΒΕΔ γωνίαι ἴσαι ἀλλήλαις εἰσίν.

Εἰλήφθω γὰρ τοῦ ΑΒΓΔ κύκλου τὸ κέντρον, καὶ ἔστω τὸ Ζ, καὶ ἐπεζεύχθωσαν αἱ ΒΖ, ΖΔ.

Καὶ ἐπεὶ ἡ μὲν ὑπὸ ΒΖΔ γωνία πρὸς τῷ κέντρῳ ἐστίν, ἡ δὲ ὑπὸ ΒΑΔ πρὸς τῇ περιφερείᾳ, καὶ ἔχουσι τὴν αὐτὴν περιφέρειαν βάσιν τὴν ΒΓΔ, ἡ ἄρα ὑπὸ ΒΖΔ γωνία διπλασίων ἐστὶ τῆς ὑπὸ ΒΑΔ. διὰ τὰ αὐτὰ δὴ ἡ ὑπὸ ΒΖΔ καὶ τῆς ὑπὸ

Proposition 21

In a circle, angles in the same segment are equal to one another.



Let $ABCD$ be a circle, and let BAD and BED be angles in the same segment $BAED$. I say that angles BAD and BED are equal to one another.

For let the center of circle $ABCD$ have been found [Prop. 3.1], and let it be (at point) F. And let BF and FD have been joined.

And since angle BFD is at the center, and BAD at the circumference, and they have the same circumference base BCD, angle BFD is thus double BAD [Prop. 3.20].

ΒΕΔ ἐστι διπλσίων· ἴση ἄρα ἡ ὑπὸ ΒΑΔ τῇ ὑπὸ ΒΕΔ.

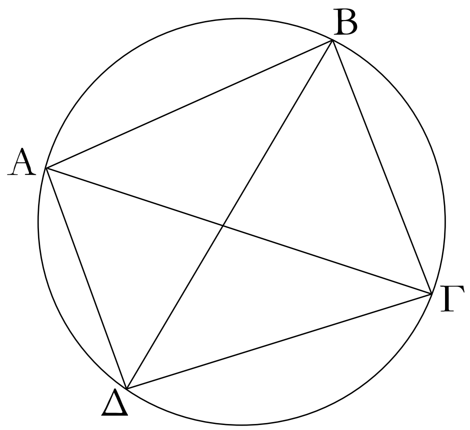
Ἐν κύκλῳ ἄρα αἱ ἐν τῷ αὐτῷ τμήματι γωνίαι ἴσαι ἀλλήλαις εἰσίν· ὅπερ ἔδει δεῖξαι.

So, for the same (reasons), BFD is also double BED. Thus, BAD (is) equal to BED.

Thus, in a circle, angles in the same segment are equal to one another. (Which is) the very thing it was required to show.

κβʹ.

Τῶν ἐν τοῖς κύκλοις τετραπλεύρων αἱ ἀπεναντίον γωνίαι δυσὶν ὀρθαῖς ἴσαι εἰσίν.



Ἔστω κύκλος ὁ ΑΒΓΔ, καὶ ἐν αὐτῷ τετράπλευρον ἔστω τὸ ΑΒΓΔ· λέγω, ὅτι αἱ ἀπεναντίον γωνίαι δυσὶν ὀρθαῖς ἴσαι εἰσίν.

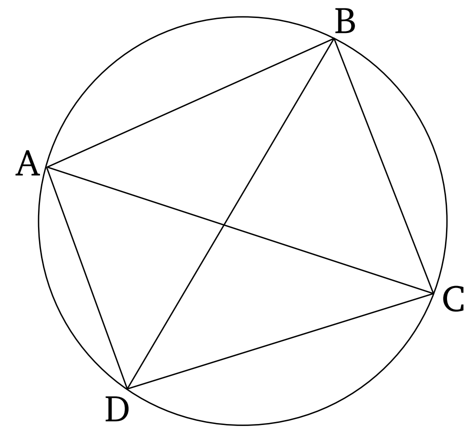
Ἐπεζεύχθωσαν αἱ ΑΓ, ΒΔ.

Ἐπεὶ οὖν παντὸς τριγώνου αἱ τρεῖς γωνίαι δυσὶν ὀρθαῖς ἴσαι εἰσίν, τοῦ ΑΒΓ ἄρα τριγώνου αἱ τρεῖς γωνίαι αἱ ὑπὸ ΓΑΒ, ΑΒΓ, ΒΓΑ δυσὶν ὀρθαῖς ἴσαι εἰσίν. ἴση δὲ ἡ μὲν ὑπὸ ΓΑΒ τῇ ὑπὸ ΒΔΓ· ἐν γὰρ τῷ αὐτῷ τμήματί εἰσι τῷ ΒΑΔΓ· ἡ δὲ ὑπὸ ΑΓΒ τῇ ὑπὸ ΑΔΒ· ἐν γὰρ τῷ αὐτῷ τμήματί εἰσι τῷ ΑΔΓΒ· ὅλη ἄρα ἡ ὑπὸ ΑΔΓ ταῖς ὑπὸ ΒΑΓ, ΑΓΒ ἴση ἐστίν. κοινὴ προσκείσθω ἡ ὑπὸ ΑΒΓ· αἱ ἄρα ὑπὸ ΑΒΓ, ΒΑΓ, ΑΓΒ ταῖς ὑπὸ ΑΒΓ, ΑΔΓ ἴσαι εἰσίν. ἀλλ᾿ αἱ ὑπὸ ΑΒΓ, ΒΑΓ, ΑΓΒ δυσὶν ὀρθαῖς ἴσαι εἰσίν. καὶ αἱ ὑπὸ ΑΒΓ, ΑΔΓ ἄρα δυσὶν ὀρθαῖς ἴσαι εἰσίν. ὁμοίως δὴ δείξομεν, ὅτι καὶ αἱ ὑπὸ ΒΑΔ, ΔΓΒ γωνίαι δυσὶν ὀρθαῖς ἴσαι εἰσίν.

Τῶν ἄρα ἐν τοῖς κύκλοις τετραπλεύρων αἱ ἀπεναντίον γωνίαι δυσὶν ὀρθαῖς ἴσαι εἰσίν· ὅπερ ἔδει δεῖξαι.

Proposition 22

For quadrilaterals within circles, the (sum of the) opposite angles is equal to two right-angles.



Let $ABCD$ be a circle, and let $ABCD$ be a quadrilateral within it. I say that the (sum of the) opposite angles is equal to two right-angles.

Let AC and BD have been joined.

Therefore, since the three angles of any triangle are equal to two right-angles [Prop. 1.32], the three angles CAB, ABC, and BCA of triangle ABC are thus equal to two right-angles. And CAB (is) equal to BDC. For they are in the same segment $BADC$ [Prop. 3.21]. And ACB (is equal) to ADB. For they are in the same segment $ADCB$ [Prop. 3.21]. Thus, the whole of ADC is equal to BAC and ACB. Let ABC have been added to both. Thus, ABC, BAC, and ACB are equal to ABC and ADC. But, ABC, BAC, and ACB are equal to two right-angles. Thus, ABC and ADC are also equal to two right-angles. Similarly, we can show that angles BAD and DCB are also equal to two right-angles.

Thus, for quadrilaterals within circles, the (sum of the) opposite angles is equal to two right-angles. (Which is) the very thing it was required to show.

κγʹ.

Ἐπὶ τῆς αὐτῆς εὐθείας δύο τμήματα κύκλων ὅμοια καὶ ἄνισα οὐ συσταθήσεται ἐπὶ τὰ αὐτὰ μέρη.

Εἰ γὰρ δυνατόν, ἐπὶ τῆς αὐτῆς εὐθείας τῆς ΑΒ δύο τμήματα κύκλων ὅμοια καὶ ἄνισα συνεστάτω ἐπὶ τὰ αὐτὰ μέρη τὰ ΑΓΒ, ΑΔΒ, καὶ διήχθω ἡ ΑΓΔ, καὶ ἐπεζεύχθωσαν

Proposition 23

Two similar and unequal segments of circles cannot be constructed on the same side of the same straight-line.

For, if possible, let the two similar and unequal segments of circles, ACB and ADB, have been constructed on the same side of the same straight-line AB. And let