# The Commentaries of Proclus on the First Book of Euclid's Elements of Geometry
# Translated by Thomas Taylor
# (London, 1792)
# Proposition 13

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## PROPOSITION XIII. Theorem VI.

When a right line standing upon a right line forms angles, it either forms two right, or angles equal to two right.

Euclid again passes on to theorems, consequent to things exhibited by problems. For after a perpendicular had been drawn to a right line, and a right line erected at right angles, it remained, to enquire if it should not be perpendicular,what angles it would form, and how it would be affected to the line upon which it stands. This then he proves universally, *that every right line standing upon a certain line, and forming angles, either forms two right, if its state be indeclinable, firm, and never verging: or angles equal to two right, if it declines in one part, but is more distant from its subject line, in the other part.* For as much as it takes away from a right angle by its declination in one part, so much it adds by its distance in the other. But it is requisite to take notice, that in this proposition also, the Geometrician employs diligent care. For he does not simply say that every right line, standing upon a right line, forms either two right angles, or angles equal to two right, but he adds, *if it form angles.* For which if standing on the extremity of the a right line, it should form one angle, will it happen that this may be equal to two right? This certainly is impossible. Since every rectilineal is less than two right, as also every solid angle is less than four right. Hence, though you should receive that which appears to be the greatest of all obtuse angles, this also must will [*sic.*] increase, as that which does not yet receive the measure of two right angles. It is requisite, therefore, that the right line should stand in such a manner, that it may form angles. And these observations regard the productive diligence of science.

But what does he mean by adding the particle, *either two right, or equal to two right*? For when he has constituted two right, he forms angles equal to two right; since right angles are equal to each other. Shall we say that one of the equal angles is also common, but that the other of the equals is only proper? But we are accustomed when both *proper* and *common* is verified, to express every particular from that which is proper, but when we cannot effect this, we are content with that which is common for the explication of the subject concerns. This then, the equality of the successive angles, is common to right angles, but is not predicated of these alone: but this, that they are right, is peculiar to their equality. Hence, the assertion, *equal to two right*, alone signifies the inequality of the angles. For in these it is alone verified, but by no means in such as are equal. And this also the institutor of the Elements divides in opposition to two right. For sincle it is predicated by itself, it has a power of signifying that the angles on each side are unequal. But through these observations we may also perceive, that equality is the measure and bound of inequality. For though the increase and decrease of an obtuse and acute angle is indeterminate and infinite, yet it is said to receive limitation, and bound from a right angle; and each of them, indeed, separately, recedes from a similitude to the right, but both, according to one harmonizing union, are reduced to its bound. But as they can by no means perfectly equal the simplicity of a right angle, they receive an equality to it when doubled, the duad being the exemplar of their infinity, as of itself endued with an infinite nature. And this seems to procure a manifest image of the progression of primary causes; and of their abiding according to one boundary, in a manner perpetually the same, about the infinity of generation. For how could otherwise generation, which participates of the more and the less, and is carried in indefinite whirls, agree with intelligibles, and be equalled with them in a certain respect, unless by participating their natures, whilst they advance with prolific powers, and only multiply themselves in their progressions? For things which abide in their own simplicity and impartibility, are entirely separated from generable natures. And thus much is assumed from the present theorem, and applied to the knowledge of universals.