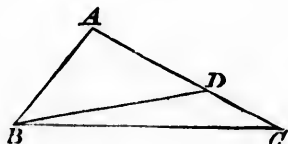


angles on the same side of it, together less than two right angles, BM and CN shall meet if produced on the same side of DE on which are the angles MOP and NPO .

PROPOSITION XVIII. THEOREM.

If one side of a triangle be greater than a second, the angle opposite the first must be greater than that opposite the second.



In $\triangle ABC$, let side AC be greater than AB .

Then must $\angle ABC$ be greater than $\angle ACB$.

From AC cut off $AD=AB$, and join BD .

I. 3.

Then

$$\therefore AB=AD,$$

$$\therefore \angle ADB = \angle ABD,$$

I. 4.

And $\therefore CD$, a side of $\triangle BDC$, is produced to A .

$$\therefore \angle ADB \text{ is greater than } \angle ACB;$$

I. 16

$$\therefore \text{also } \angle ABD \text{ is greater than } \angle ACB.$$

Much more is $\angle ABC$ greater than $\angle ACB$.

Q. E. D.

Ex. Shew that if two angles of a triangle be equal, the sides which subtend them are equal also (Eucl. I. 6).