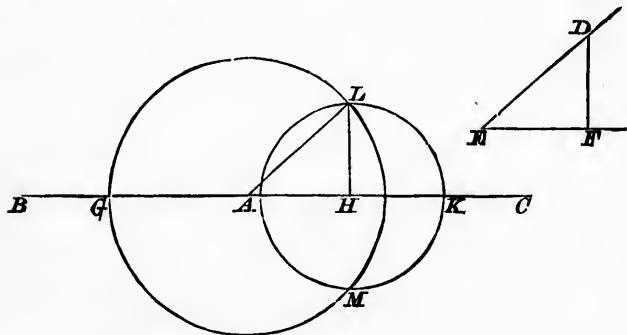


PROPOSITION XXIII. PROBLEM.

At a given point in a given straight line, to make an angle equal to a given angle.



Let A be the given pt., BC the given line, DEF the given $\angle$.

It is reqd. to make at pt. A an angle $= \angle DEF$.

In ED , EF take any pts. D , F ; and join DF .

In AB , produced if necessary, make $AG = DE$.

In AC , produced if necessary, make $AH = EF$.

In HC , produced if necessary, make $HK = FD$.

With centre A , and distance AG , describe $\odot GLM$.

With centre H , and distance HK , describe $\odot LKM$.

Join AL and HL .

Then $\because LA = AG, \therefore LA = DE$; Ax. 1.

and $\because HL = HK, \therefore HL = FD$. Ax. 1.

Then in $\triangle LAH$, DEF ,

$\because LA = DE$, and $AH = EF$, and $HL = FD$;

$\therefore \angle LAH = \angle DEF$.

I. c.

$\therefore$ an angle LAH has been made at pt. A as was reqd.

Q. E. F.