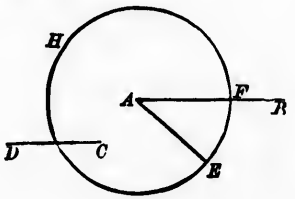
### Proposition III. Problem.

*From the greater of two given straight lines to cut off a part equal to the less.*




Let $AB$ be the greater of the two given st. lines $AB$, $CD$.

*It is required to cut off from $AB$ a part $= CD$.*

From $A$ draw the st. line $AE = CD$. I. 2.

With centre $A$ and distance $AE$ describe $\odot EFH$, cutting $AB$ in $F$.

Then will $AF = CD$.

For $\because$ $A$ is the centre of $\odot EFH$,

$\therefore AF = AE$.

But $AE = CD$;

$\therefore AF = CD$. Ax. 1.

Thus from $AB$ a part $AF$ has been cut off $= CD$.

Q. E. F.

#### Exercises.

1. Shew that if straight lines be drawn from $A$ and $B$ in the diagram of Prop. I. to the other point in which the circles intersect, another equilateral triangle will be described on $AB$.

2. By a construction similar to that in Prop. III. produce the less of two given straight lines that it may be equal to the greater.

3. Draw a figure for the case in Prop. II., in which the given point coincides with $B$.

4. By a similar construction to that in Prop. I. describe on a given straight line an isosceles triangle, whose equal sides shall be each equal to another given straight line.