Proposition I.3

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Prop I.3: Given two unequal straight lines, to cut off from the greater a straight line equal to the less

Let $AB$ and $C$ be the unequal straight lines, and let $AB$ be the greater

We must divide $AB$ into two pieces such that one of the pieces is the same size as $C$

-Draw straight line $AD$ at the point $A$ with the same length as $C$ (Prop I.2)
-Draw circle $DEF$ with center $A$ and radius $AD$ (postulate 3)

\[-AD=AE\text{ (Definition 15)}\]
\[-AD=C\text{ (Prop I.2)}\]
\[-AE=C\text{ (c.n. 1)}\]

Thus, a line $AE$ has been cut off from $AB$ such that $AE=C$, and the desired result is obtained

QEF