

Notes on the proof of Theorem III.3.8

The proof in the notes should start by noting that $d(Q, X) = a$ and $X \in AB$ holds if and only if X lies on the circle Γ . Then one can rephrase the conclusion of the theorem to state the following:

- (a) We have $d(Q, X) < a$ if and only if $A * X * B$.
- (b) We have $d(Q, X) = a$ if and only if $X \in \Gamma$.
- (c) We have $d(Q, X) > a$ if and only if either $A * B * X$ or $X * A * B$.

The proofs of (a) and (c) go through exactly as in the notes.