

**This should be added at the indicated point of
Lecture 12, page 4**

Theorem. If $f: P \rightarrow P$ is a plane isometry and A, B, C are noncollinear points of P , then $f(A), f(B), f(C)$ are also noncollinear and $|\angle ABC| = |\angle f(A) f(B) f(C)|$.

Proof. By the isometry assumption we have $|AB| = |f(A) f(B)|$, $|BC| = |f(B) f(C)|$, and $|AC| = |f(A) f(C)|$. Therefore by the S.S.S. congruence axiom we have $\triangle ABC \cong \triangle f(A) f(B) f(C)$, and the latter implies that $|\angle ABC| = |\angle f(A) f(B) f(C)|$. ■