Theorem 20 hints

Theorem 20: (segments can be duplicated): Given a ray starting at a given point, and a distance between two points, there exists another point that lies on the given ray such that the segment between it and the starting point of the ray is equal to the given distance.

Given: $\overrightarrow{AB}$ and $m\overline{CD}$

Then: There exists a point $E \in \overrightarrow{AB}$ such that $m\overline{AE} = m\overline{CD}$

Hints: You're going to start by getting an isometry that maps C to A and D onto $\overrightarrow{AB}$. Then the image of D will have the properties you need for the point E that you need to prove exists (so E will be the image of D).

You can use one of the earlier lemmas on page 3 to get you started.
If you really understand the proof of lemma 12, you should be able to do this one by making small changes to that proof.