Name:_____

Date:_____Per.:_____

Geometry Constructions #1

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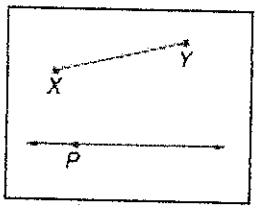
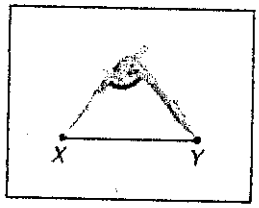
CONSTRUCTION

Copy a Segment

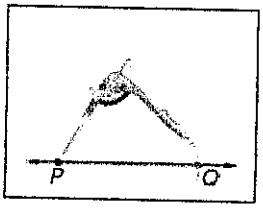
Step 1 Draw a segment $\overline{XY}$. Elsewhere on your paper, draw a line and a point on the line. Label the point P.



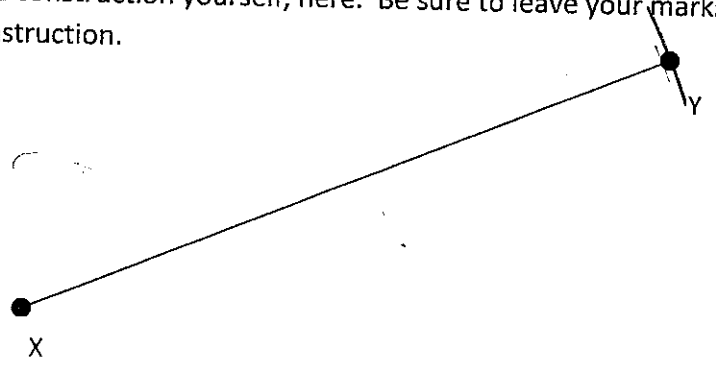
Step 2 Place the compass at point X and adjust the compass setting so that the pencil is at point Y.



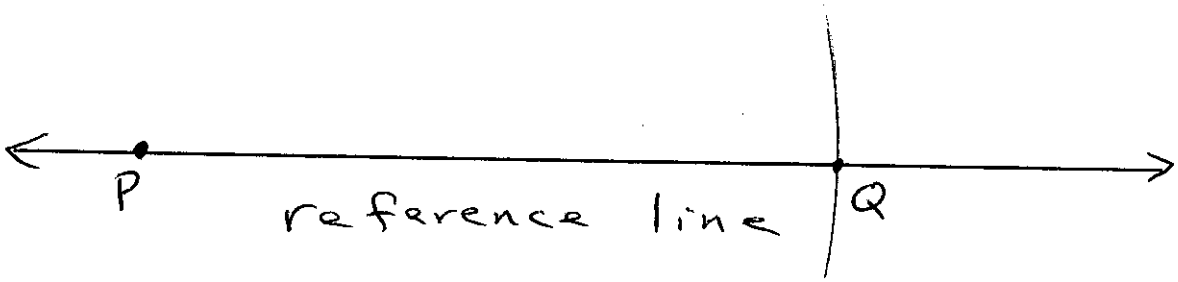
Step 3 Using that setting, place the compass point at P and draw an arc that intersects the line. Label the point of intersection Q. Because of identical compass settings, $\overline{PQ} \cong \overline{XY}$.



Now do the construction yourself, here. Be sure to leave your marks to show that you actually did the construction.



$\overline{XY} \cong \overline{PQ}$



Name:_____

Date:_____ Per.:_____

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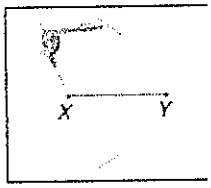
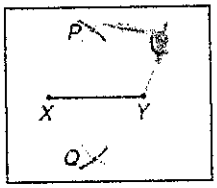
CONSTRUCTION

Bisect a Segment

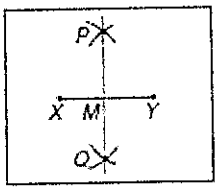
Step 1 Draw a segment and name it $\overline{XY}$. Place the compass at point X. Adjust the compass so that its width is greater than $\frac{1}{2}XY$. Draw arcs above and below $\overline{XY}$.



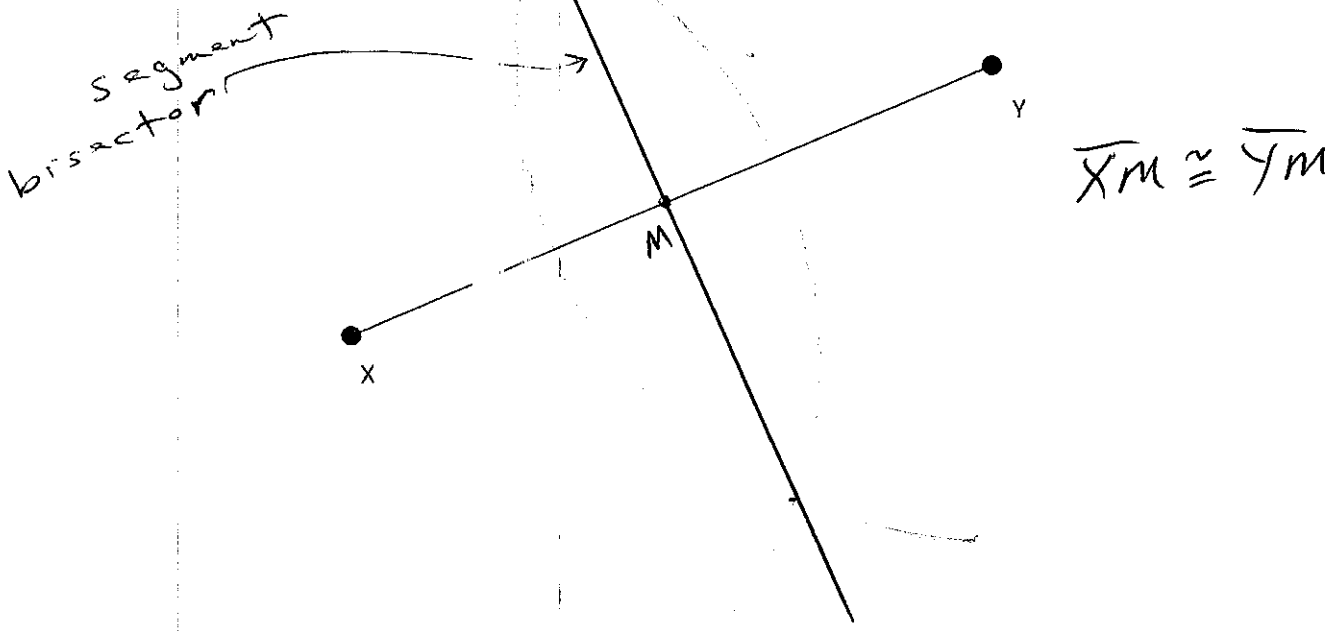
Step 2 Using the same compass setting, place the compass at point Y and draw arcs above and below $\overline{XY}$ that intersect the two arcs previously drawn. Label the points of intersection as P and Q.



Step 3 Use a straightedge to draw $\overleftrightarrow{PQ}$. Label the point where it intersects $\overline{XY}$ as M. Point M is the midpoint of $\overline{XY}$, and $\overleftrightarrow{PQ}$ is a bisector of $\overline{XY}$. Also $XM = MY = \frac{1}{2}XY$.



Now do the construction you el , here. Be sure to leave your marks to show that you actually did the construction.



$\overline{XM} \cong \overline{YM}$