Lesson 7-8

Vocabulary

A compass is _____________________________.
A midpoint is _____________________________.
A segment bisector is _______________________.

Perpendicular lines are _____________________________.
A perpendicular bisector is _________________________.

Examples

1. Constructing a Congruent Segment

Construct segment $XY$ congruent to $ST$.

Step 1 Draw a ray with endpoint $X$.

Step 2 Open the compass to the length of $ST$.

Step 3 Keep the compass open to the same width. Put the compass point on $X$. Draw an arc that intersects the ray. Label the point of intersection $Y$.

$XY$ is congruent to $ST$. 
2 Constructing a Perpendicular Bisector

Construct the perpendicular bisector of $\overline{PQ}$.

Step 1 Set the compass to more than half the length of $\overline{PQ}$. Put the tip of the compass at $P$ and draw an arc intersecting $\overline{PQ}$. Keeping the compass set at the same width, put the tip at $Q$ and draw another arc intersecting $\overline{PQ}$. Points $C$ and $D$ are where the arcs intersect.

Step 2 Draw $\overline{CD}$. The intersection of $\overline{PQ}$ and $\overline{CD}$ is point $M$. $\overline{CD}$ is the perpendicular bisector of $\overline{PQ}$. Point $M$ is the midpoint of $\overline{PQ}$.

Quick Check

1. Draw a segment $\overline{TR}$ 25 mm long. Construct $\overline{SV}$ congruent to $\overline{TR}$.

2. Draw a segment 3 in. long. Label the segment $\overline{XY}$. Construct the perpendicular bisector of $\overline{XY}$. 