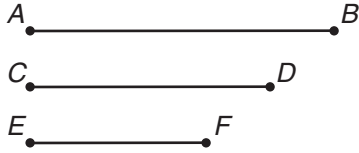


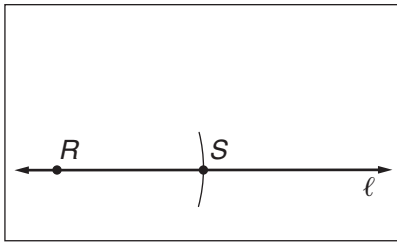
Drawing Geometric Figures

You can construct triangles if you are given parts of the triangle.

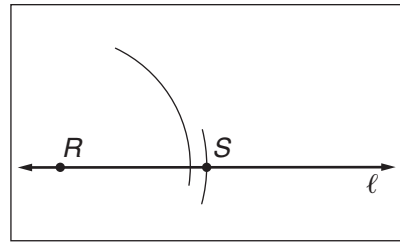
Follow the steps to construct a triangle given the three sides shown.



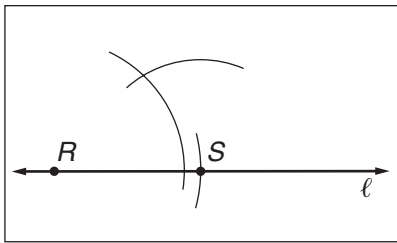
Step 1 Use a straightedge to draw any line ℓ and select a point R on ℓ . Use a compass to construct \overline{RS} on ℓ such that $\overline{RS} \cong \overline{AB}$.



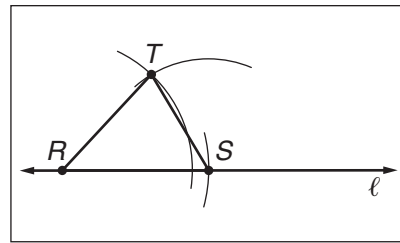
Step 2 Using R as the center, draw an arc with radius equal to CD .



Step 3 Using S as the center, draw an arc with radius equal to EF .

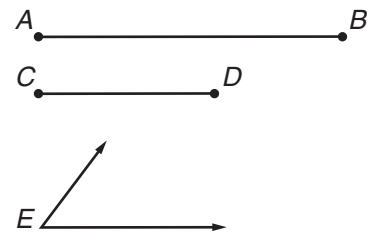


Step 4 Let T be the point of intersection of the two arcs. Draw \overline{RT} and \overline{ST} to form $\triangle RST$.

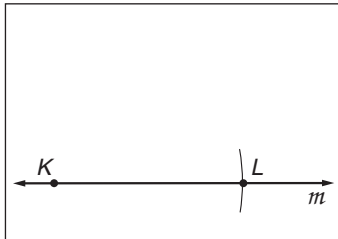


Compare the triangle you constructed to some of the triangles your classmates constructed. Are the triangles congruent to each other?

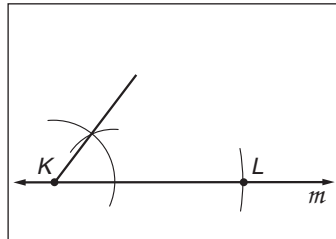
Follow the steps to construct a triangle given the two sides and the angle between them shown at the right.



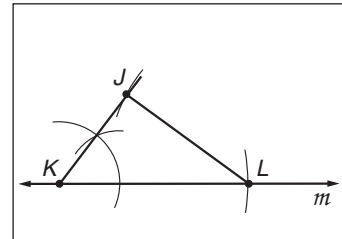
Step 1 Use a straightedge to draw any line m and select a point K on m . Use a compass to construct \overline{KL} on m such that $\overline{KL} \cong \overline{AB}$.



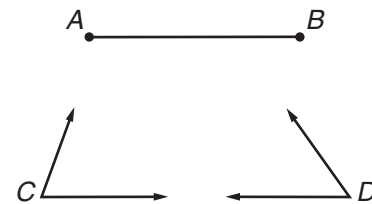
Step 2 Construct an angle congruent to $\angle E$ using \overline{KL} as a side of the angle and point K as the vertex.



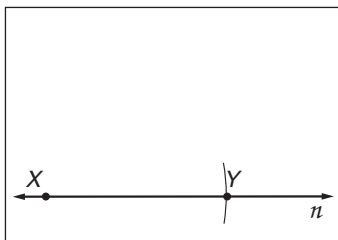
Step 3 Construct \overline{JK} such that $\overline{JK} \cong \overline{CD}$. Draw \overline{JL} to complete $\triangle JKL$.



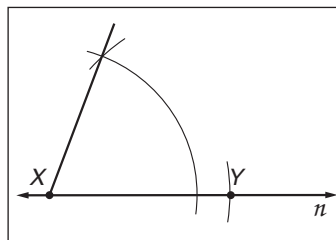
Follow the steps to construct a triangle given the two angles and the side between them shown at the right.



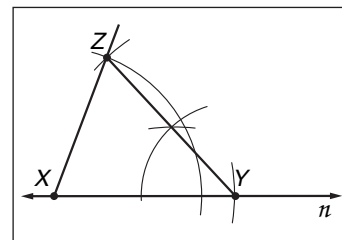
Step 1 Use a straightedge to draw any line n and select a point X on n . Use a compass to construct \overline{XY} on n such that $\overline{XY} \cong \overline{AB}$.



Step 2 Construct an angle congruent to $\angle C$ using \overline{XY} as a side of the angle and point X as the vertex.



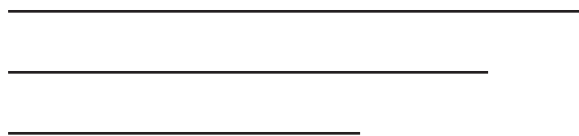
Step 3 Construct an angle congruent to $\angle D$ using \overline{YX} as a side of the angle and point Y as the vertex. Label the point where the new sides of the angles meet Z . Draw \overline{YZ} to form $\triangle XYZ$.



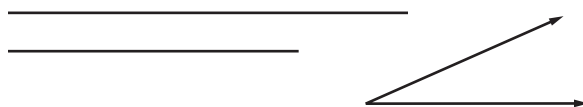
Compare the triangle you constructed to some of the triangles your classmates constructed. Are all the triangles labeled JKL congruent to each other? Are all the triangles labeled XYZ congruent to each other?

Use a compass and a straightedge to construct each triangle.

1. Construct a triangle given the three sides shown below.



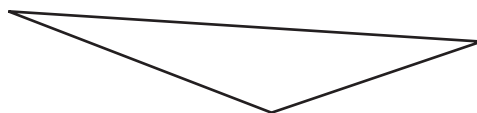
2. Construct a triangle given the two sides and the angle between them shown below.



3. Construct a triangle given the two angles and the side between them shown below.



4. Construct a triangle congruent to the triangle shown below.



Use a compass, a ruler, and/or a straightedge to draw each figure.

5. Draw a triangle with sides 4 inches, 5 inches, and 7 inches long.
6. Draw an equilateral triangle with sides 6 inches long.
7. Draw a rectangle with sides 7 inches and 4 inches long.
8. Draw a triangle with two sides 8 inches and 5 inches long and an angle of 65° between them.
9. Draw a right triangle with legs 4 inches and 2 inches long.
10. Draw a triangle with two angles with measures of 75° and 40° and a side 6 inches long between them.