

Review of Basic Constructions

1. Construct a segment congruent to \overline{AB} using patty paper. Use mathematics to explain how you constructed the line segment. Use words, symbols, or both in your explanation.



2. Construct a segment congruent to \overline{CD} using a Mira™. Use mathematics to explain how you constructed the line segment. Use words, symbols, or both in your explanation.



3. Construct a segment congruent to \overline{EF} using a compass and straightedge. Use mathematics to explain how you constructed the line segment. Use words, symbols, or both in your explanation.



4. Which of these methods do you prefer to use to construct a segment congruent to a given segment? Why?

1. Steps for patty paper construction
 - (1) Trace \overline{AB} onto a piece of patty paper. Label it $\overline{A'B'}$.
 - (2) Make heavy dots at A' and B' .
 - (3) Turn the patty paper over so that $\overline{A'B'}$ is on the underside of the patty paper. Place the patty paper so that $\overline{A'B'}$ is close to \overline{AB} .
 - (4) Transfer points A' and B' to the original paper by rubbing the patty paper at points A' and B' .
 - (5) Connect the images of A' and B' with a straightedge. Label this new segment $\overline{A''B''}$.

2. Steps for Mira construction
 - (1) Place the beveled edge of the Mira™ parallel to and slightly above \overline{CD} .
 - (2) Look through the Mira™ and locate the reflection of \overline{CD} . Draw the reflection of \overline{CD} with a straightedge. Label it $\overline{C'D'}$.

3. Steps for compass and straightedge construction
 - (1) Draw $\overrightarrow{E'X}$ that is longer than \overline{EF}
 - (2) Set compass to the length of \overline{EF}
 - (3) Set point of the compass on E'
 - (4) Mark the distance of \overline{EF} on $\overrightarrow{E'X}$
 - (5) Label the intersection as F'

4. Answers will vary. Examine student reasons for “Why?”