

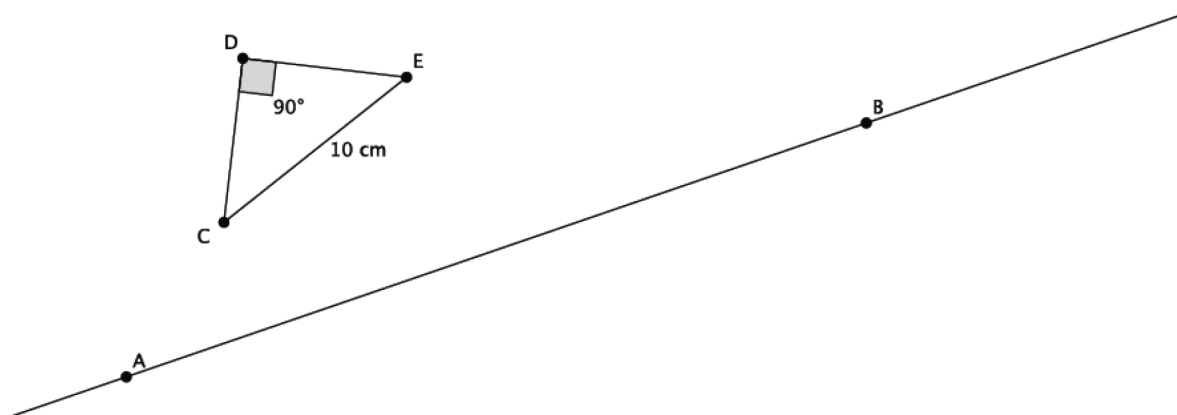
Name _____

Date _____

Definition of Reflection and Basic Properties

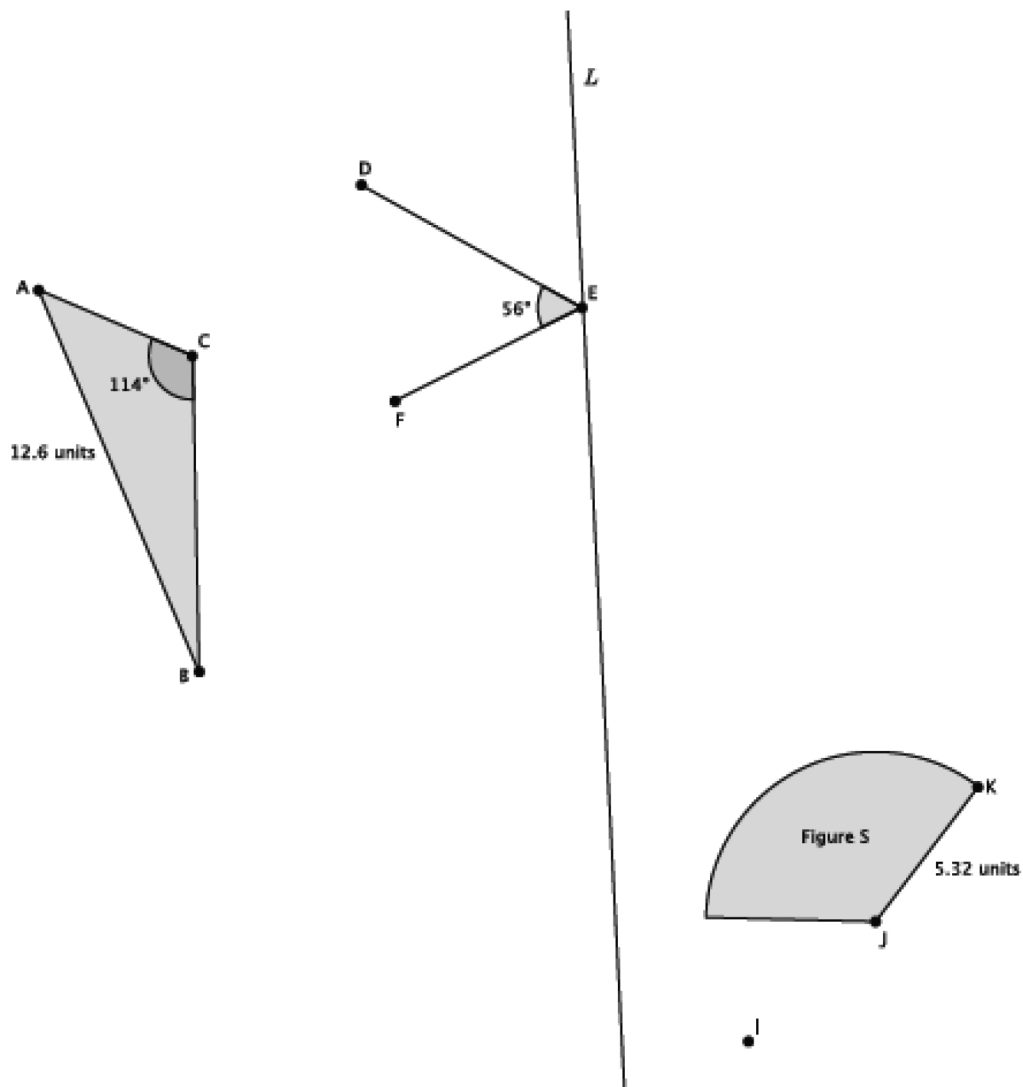
1. Let there be a reflection across line L_{AB} . Reflect $\triangle CDE$ and label the reflected image.

Picture not drawn to scale.



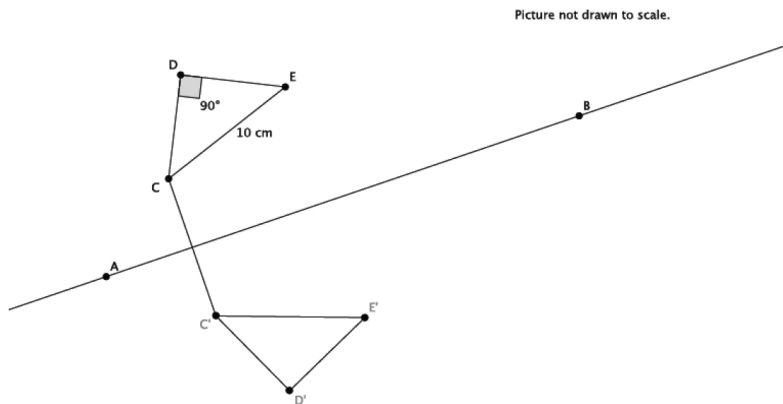
2. Use the diagram above to state the measure of $\text{Reflection}(\angle CDE)$. Explain.
3. Use the diagram above to state the length of segment $\text{Reflection}(CE)$. Explain.
4. Connect point C to its image in the diagram above. What is the relationship between line L_{AB} and the segment that connects point C to its image?

1. In the picture below, $\angle DEF = 56^\circ$, $\angle ACB = 114^\circ$, $AB = 12.6$ units, $JK = 5.32$ units, point E is on line L , and point I is off of line L . Let there be a reflection across line L . Reflect and label each of the figures, and answer the questions that follow.



2. What is the measure of $\text{Reflection}(\angle DEF)$? Explain.
3. What is the length of $\text{Reflection}(JK)$? Explain.
4. What is the measure of $\text{Reflection}(\angle ACB)$?
5. What is the length of $\text{Reflection}(AB)$?
6. Two figures in the picture were not moved under the reflection. Name the two figures and explain why they were not moved.
7. Connect points I and I' . Name the point of intersection of the segment with the line of reflection point Q . What do you know about the lengths of segments IQ and QI' ?

1. Let there be a reflection across line L_{AB} . Reflect $\triangle CDE$ across line L_{AB} . Label the reflected image.



2. Use the diagram above to state the measure of $\text{Reflection}(\angle CDE)$. Explain.

The measure of $\text{Reflection}(\angle CDE) = 90^\circ$ because reflections preserve degrees of measures of angles.

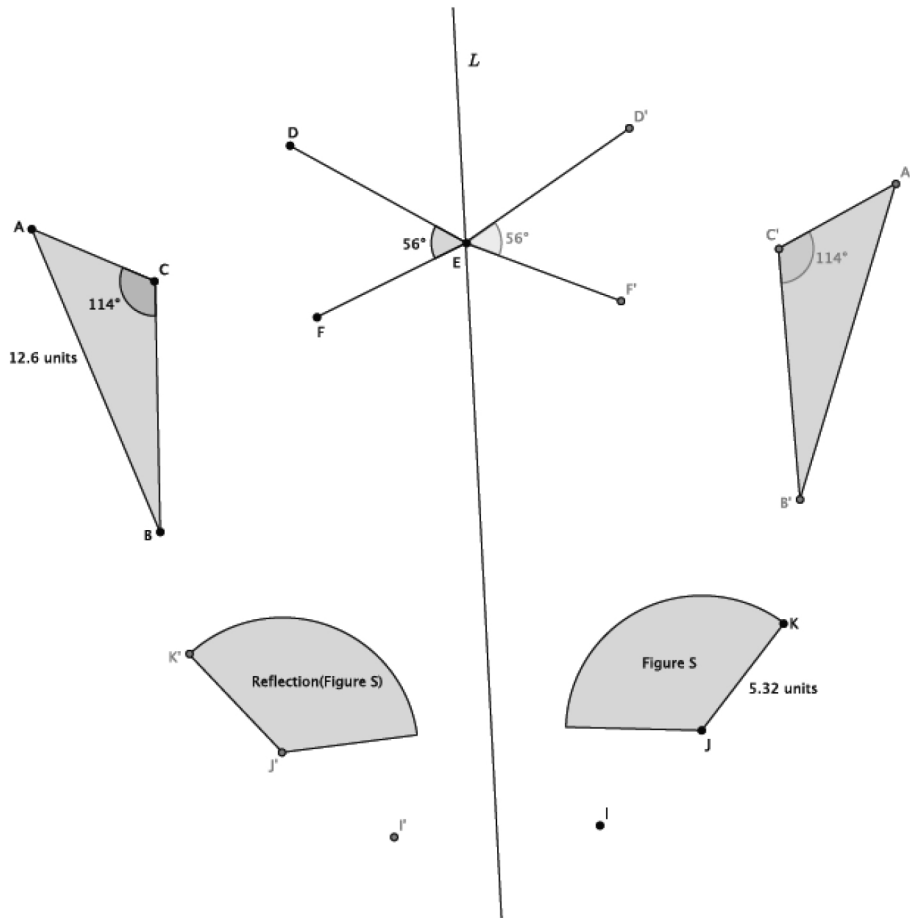
3. Use the diagram above to state the length of segment $\text{Reflection}(CE)$. Explain.

The length of $\text{Reflection}(CE)$ is 10 cm because reflections preserve segment lengths.

4. Connect point C to its image in the diagram above. What is the relationship between line L_{AB} and the segment that connects point C to its image?

The line of reflection bisects the segment that connects C to its image.

1. In the picture below, $\angle DEF = 56^\circ$, $\angle ACB = 114^\circ$, $AB = 12.6$ units, $JK = 5.32$ units, point E is on line L , and point I is off of line L . Let there be a reflection across line L . Reflect and label each of the figures, and answer the questions that follow.



2. What is the measure of $\text{Reflection}(\angle DEF)$? Explain.

The measure of $\text{Reflection}(\angle DEF) = 56^\circ$. Reflections preserve degrees of angles.

3. What is the length of $\text{Reflection}(JK)$? Explain.

The length of $\text{Reflection}(JK) = 5.32$ units. Reflections preserve lengths of segments.

4. What is the measure of $\text{Reflection}(\angle ACB)$?

The measure of $\text{Reflection}(\angle ACB) = 114^\circ$.

5. What is the length of $\text{Reflection}(AB)$?

The length of $\text{Reflection}(AB) = 12.6$ units.

6. Two figures in the picture were not moved under the reflection. Name the two figures and explain why they were not moved.

Point E and line L were not moved. All of the points that make up the line of reflection remain in the same location when reflected. Since point E is on the line of reflection, it is not moved.

7. Connect points I and I' . Name the point of intersection of the segment with the line of reflection point Q . What do you know about the lengths of segments IQ and QI' ?

Segments IQ and QI' are equal in length. The segment II' connects point I to its image, I' . The line of reflection will go through the midpoint, or bisect, the segment created when you connect a point to its image.