LAUNCH:

Translate these congruence statements into English sentences.

1. $\overline{TO} \cong \overline{BE}$

   Line segment TO is congruent to line segment BE

2. $\triangle TRL \cong \triangle MTV$

   Triangle TRL is congruent to triangle MTV.

3. $\angle ABC \cong \angle ABD$ Angle ABC is congruent to angle ABD

2.2 Length, Measure, and Congruence

Objective: Students will interpret statements about congruent figures and write statements using the correct notation.

segment - part of a line consisting of two endpoints

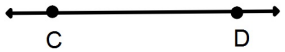
$\overline{AB}$ "segment AB"

$\overline{BA}$ "segment BA"

ray - part of the line consisting of one endpoint

$\overrightarrow{YX}$ "ray YX"

line - a series of points that extends in two directions without end



$\overleftrightarrow{CD}$ "line CD"

$\overleftrightarrow{DC}$ "line DC"

$\cong$

OBJECTS

$\overline{JK} \cong \overline{AB}$

$\angle ABC \cong \angle DEF$

$\triangle ABC \cong \triangle DEF$

$=$

NUMBERS

$JK = AB$

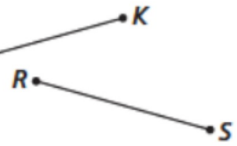
$JK = 9in$

$m\angle ABC = m\angle DEF$

$m\angle ABC = 45°$

WHICH OF THESE MAKE SENSE?

1. $JK \cong RS$ No
2. $\overline{JK} \cong \overline{RS}$ yes
3. $JK = RS$ yes
4. $\overline{JK} = \overline{RS}$ No
5. $JK = 1$ inch yes
6. $\overline{JK} = 1$ NO
7. $\overline{JK} \cong 1$ inch NO



Check Your Understanding

p.76 (1-5,8,9)

1. Decide whether each statement below describes geometric objects or numbers. If a statement describes geometric objects, state whether points, segments, or other objects are explicitly mentioned.
   a. $JK = RS$
   b. $\overline{JK} \cong \overline{RS}$
   c. $\overline{JK}$ and $\overline{RS}$ are the same length.
   d. The distance from J to K is the same as the distance from R to S.
2. a. Explain why the following statement is incorrect: $\angle NPQ = 56.6°$
   b. Write the following statement symbolically: Angle NPQ has a measure of 56.6 degrees.
3. If $m\angle NPQ = m\angle RST$, are the two angles congruent? Explain.
4. If $\angle NPQ \cong \angle RST$, are the measures of the two angles equal? Explain.
5. Explain whether the following statement is true or false: If two triangles are both congruent to the same triangle, then they are congruent to each other.

8. **Standardized Test Prep** Anna has a simple rule for deciding which symbol to use.

   Objects are congruent. Measurements of objects are equal.

   Which of the following statements is NOT written correctly according to Anna's rule?

   A. $\overline{DF} \cong \overline{RT}$
   B. $m\angle CSD \cong m\angle BSL$
   C. $\angle ADF \cong \angle WZM$
   D. $AC = FH$

9. Are all equilateral triangles congruent? Explain.