

Geometry

Chapter 9

Section 9-5

take note

Key Concept Congruent Figures

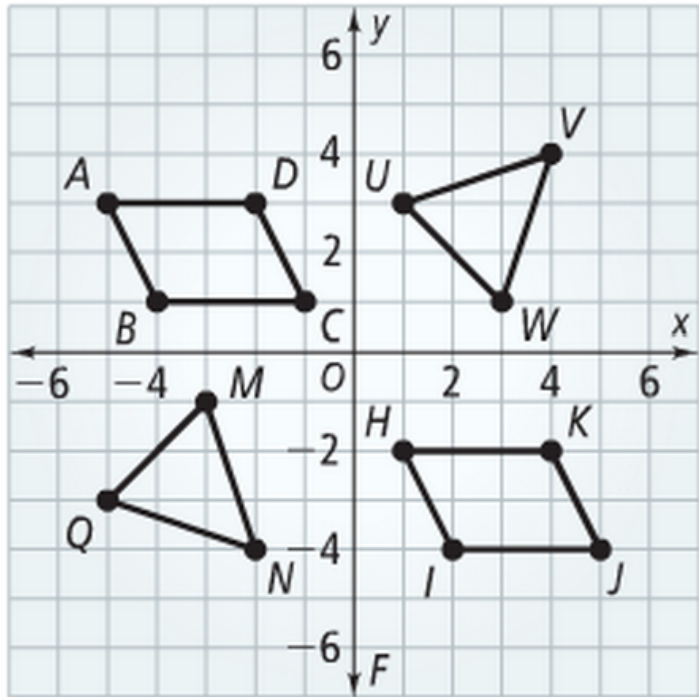
Two figures are **congruent** if and only if there is a sequence of one or more rigid motions that maps one figure onto the other.

↳ or isometries

Because compositions of rigid motions take figures to congruent figures, they are also called **congruence transformations**.

Is $ABCD \cong HIJK$?

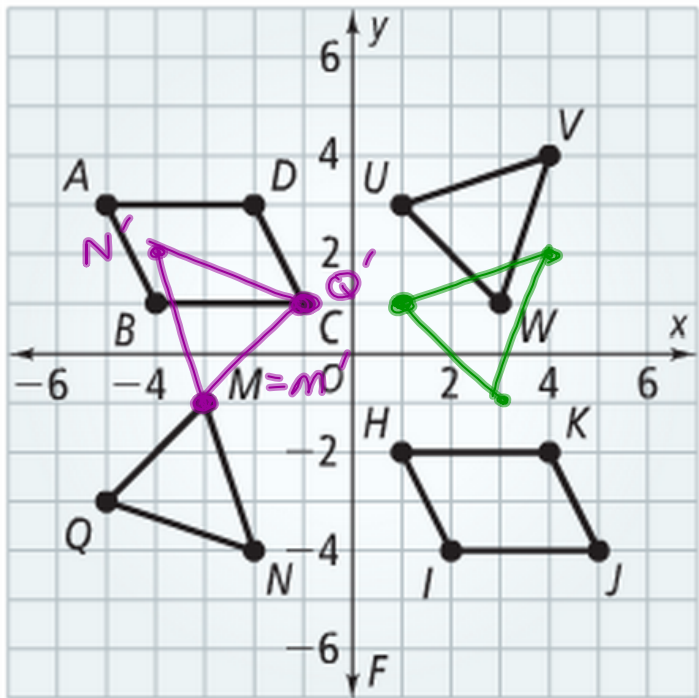
Is $\triangle QMN \cong \triangle UVW$?



Write a transformation rule (or rules) that maps ABCD to HIJK.

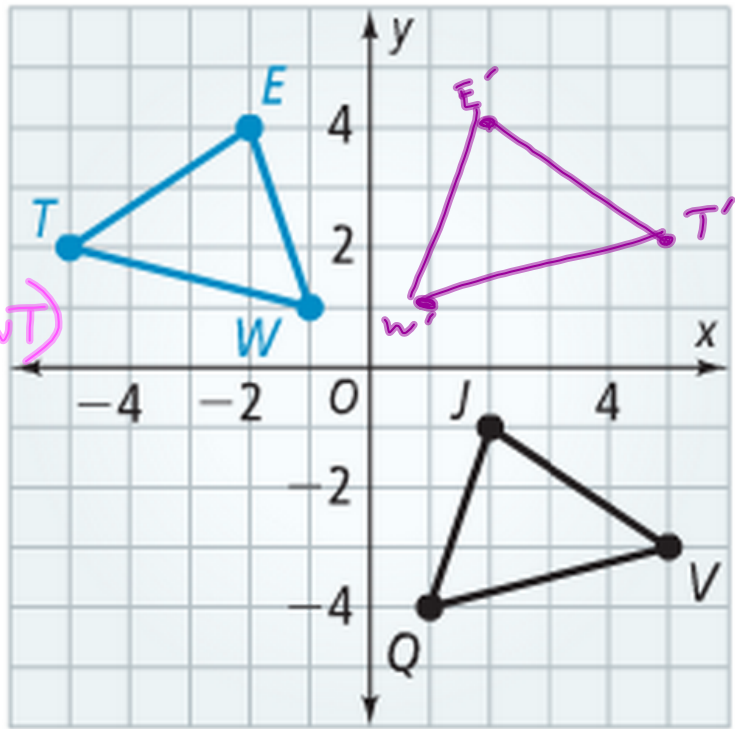
$T_{\langle 6, -5 \rangle}(ABCD)$

Write a transformation rule (or rules) that maps $\triangle QNM$ to $\triangle UVW$?



$(T_{\langle 0, 2 \rangle} \circ R_{y\text{-axis}} \circ r_{(180, M)})(\triangle QNM)$

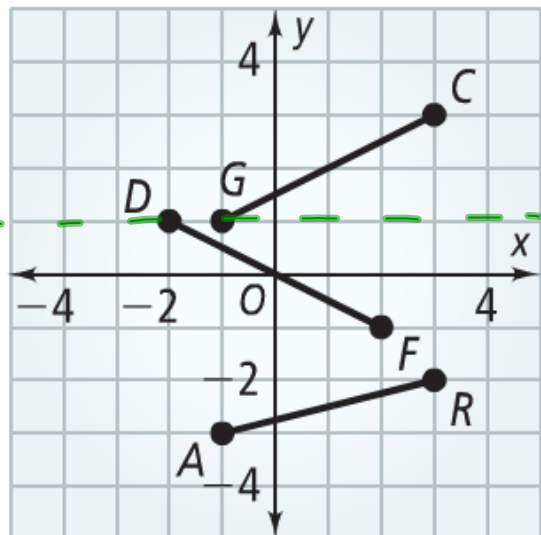
Write a transformation rule (or composition) that maps the blue triangle onto the black one. Then write a congruence statement.



$$(T_{(0, -5)} \circ R_{y\text{-axis}})(\triangle EWT)$$

$$\triangle WET \cong \triangle QJV$$

Identify the congruent figures in the diagram. Then use a set of congruence transformations to map one onto the other.



$$\overline{GC} \cong \overline{DF}$$

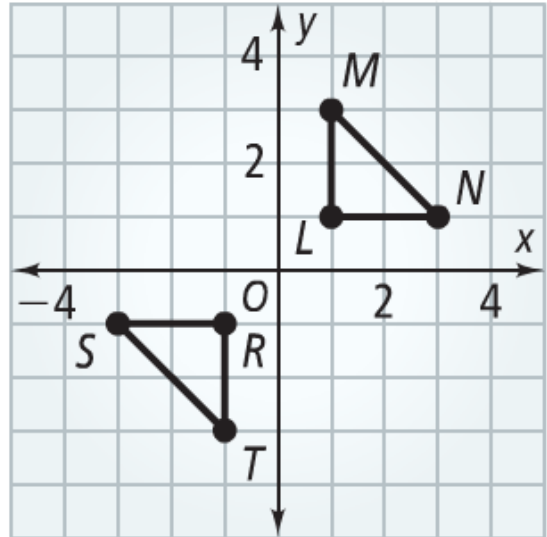
$$(T_{(-1, 0)} \circ R_{y=1})(\overline{GC})$$

or

$$(R_{y=1} \circ T_{(-1, 0)})(\overline{GC})$$

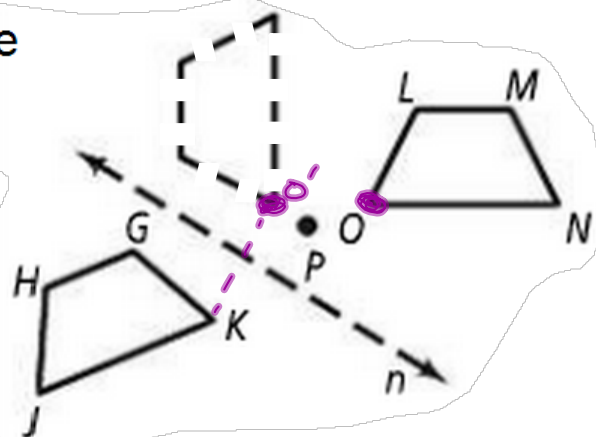
Find a congruence transformation that maps $\triangle LMN$ to $\triangle RST$.

~~$(180, 0)$ $(\triangle LMN) = \triangle RTS$~~
 $R_{y=-x}(\triangle LMN) = \triangle RST$



Which is the correct rule for the transformation shown?

~~Translation~~
~~Reflection~~
~~Rotation~~
~~Dilation~~



Homework

Pages 582 - 585

1, 2, 6, 8, 9, 10, 17, 18, 19, 21, 23, 28