Name KEY Date _____ Period _____

Lesson 4.7 Congruence Transformations

Active Vocabulary

New Vocabulary Match the term with its definition by drawing a line to connect the two.

congruence transformation	a transformation in which the position of the image may differ from that of the preimage, but the two figures remain congruent
image	a type of transformation that is a flip over a line
isometry	also known as a rigid transformation
preimage	the end result of a geometric transformation
reflection	an operation that maps an original geometric figure onto a new figure
rotation	a type of transformation that is a turn around a fixed point
transformation	a type of transformation that is a slide of a figure
translation	the original figure in a geometric transformation

Helping You Remember

Geometric reflections, translations, and rotations are also known as *flips*, *slides*, and *turns*. Describe how these terms appropriately illustrate the corresponding transformations.

translation = slide on the same plane

rotation = turn around a fixed point

reflection = flip over a line

Main Idea	Details

Identify Congruence Transformation

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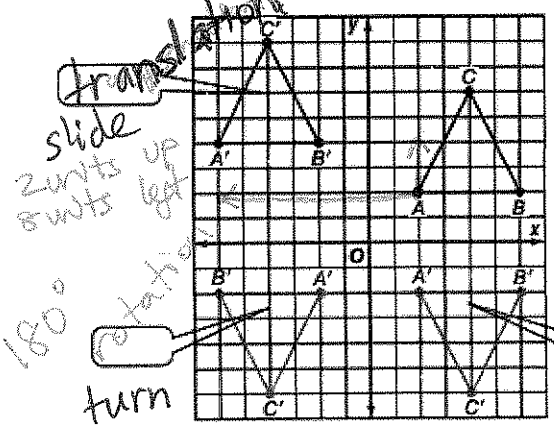
Write the type of transformation of triangle *ABC* (the preimage) in each box.



Verify Congruence

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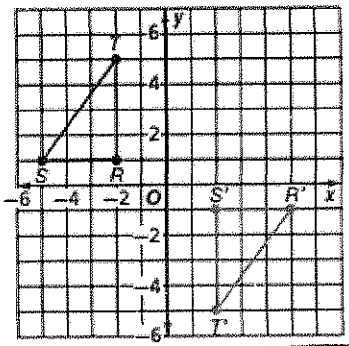
Complete each statement to verify the congruence.



$RS =$ R'S'

$ST =$ R'T'

$RT =$ S'T'

$R'S' =$ RS

$S'T' =$ RT

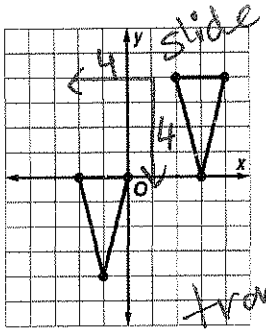
$R'T' =$ ST

△SRT ≅ △R'S'T' by SSS Postulate

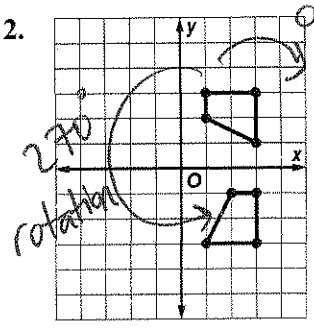
Practice

Identify the type of congruence transformation shown as a *reflection*, *translation*, or *rotation*.

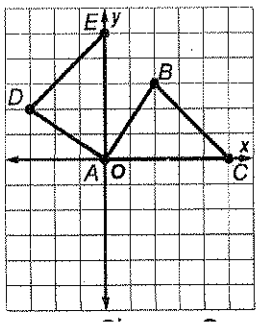
1.



2.



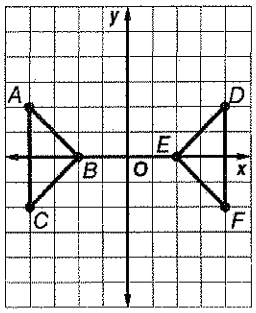
3. Identify the type of congruence transformation shown as a *reflection*, *translation*, or *rotation*, and verify that it is a congruence transformation.



△ABC ≅ △ADE

by SSS Postulate

4. $\triangle ABC$ has vertices $A(-4, 2)$, $B(-2, 0)$, $C(-4, -2)$. $\triangle DEF$ has vertices $D(4, 2)$, $E(2, 0)$, $F(4, -2)$. Graph the original figure and its image. Then identify the transformation and verify that it is a congruence transformation.

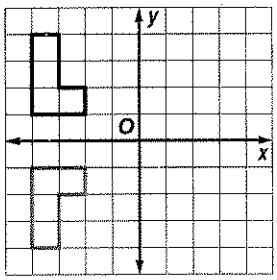


it is a reflection over y-axis.

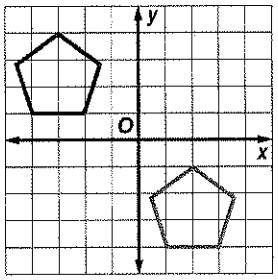
Homework (Due 11/17)

Identify the type of congruence transformation shown as a *reflection*, *translation*, or *rotation*.

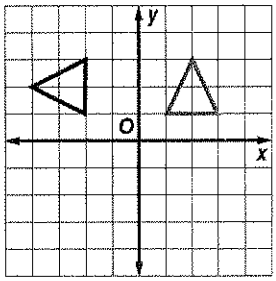
1.



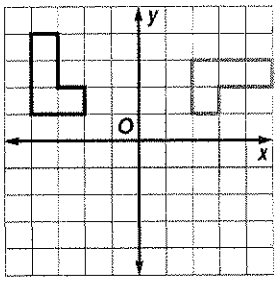
2.



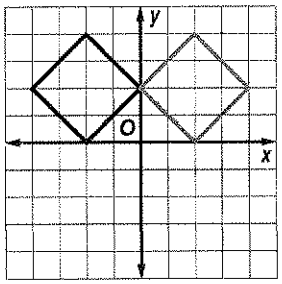
3.



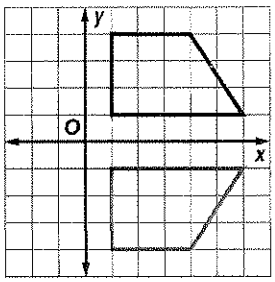
4.



5.

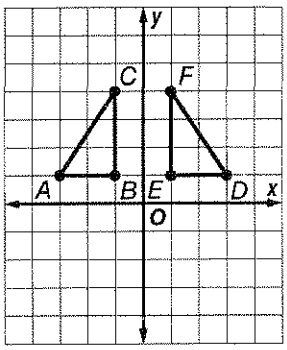


6.

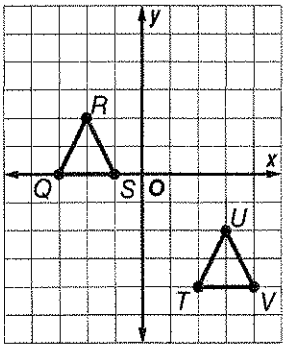


COORDINATE GEOMETRY Graph each pair of triangles with the given vertices. Then identify the transformation, and verify that it is a congruence transformation.

7. $A(-3, 1)$, $B(-1, 1)$, $C(-1, 4)$;
$D(3, 1)$, $E(1, 1)$, $F(1, 4)$



8. $Q(-3, 0)$, $R(-2, 2)$, $S(-1, 0)$;
$T(2, -4)$, $U(3, -2)$, $V(4, -4)$



ALL PARTS NEED TO BE COMPLETED! SHOW WORK! NO WORK = 0 GRADE!!! KEEP NOTES IN YOUR BINDER. IF YOU LOOSE IT = 0 GRADE!!!