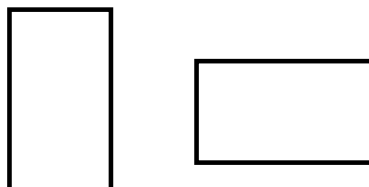
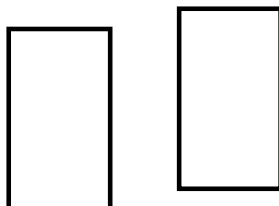


1.3 Translations

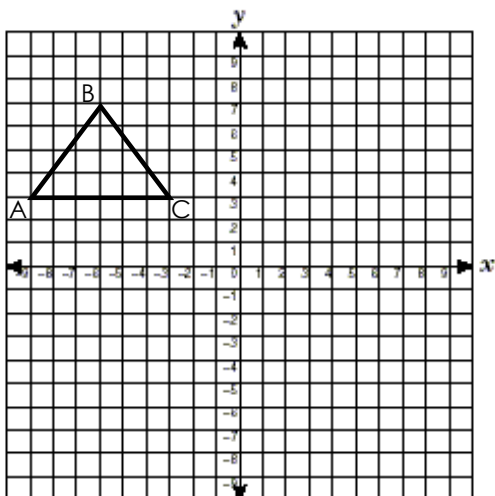
One day you'll look back at this lesson and tell your grandkids about it.

What is a Translation?

A translation is when you _____ a point, line, or shape **without rotating** or **flipping it**. The shape still looks exactly the same, just in a different place.



Skill 1: Performing Translations



△ ABC is translated 5 units down and 3 to the right. What is the coordinate of △ A'B'C'?

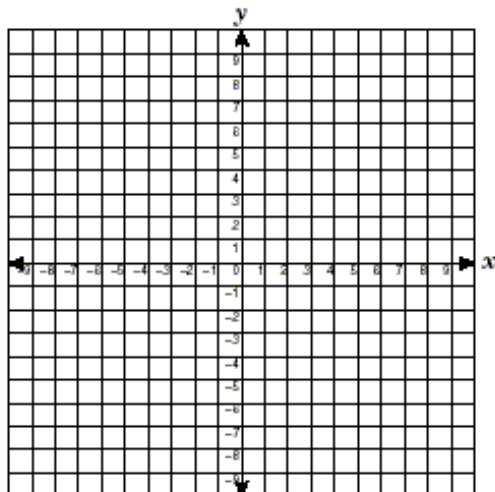
A(____,____) → A'(____,____)

B(____,____) → B'(____,____)

C(____,____) → C'(____,____)

Is △ ABC ≅ △ A'B'C'? Explain using the properties of rigid motions.

Given □ ABCD with A(2,1), B(2,4), C(7,4), D(7,1). A translation of $(x,y) \rightarrow (x+3, y-4)$ is applied to □ ABCD. What are the coordinates of □ A'B'C'D'?



A(____,____) → A'(____,____)

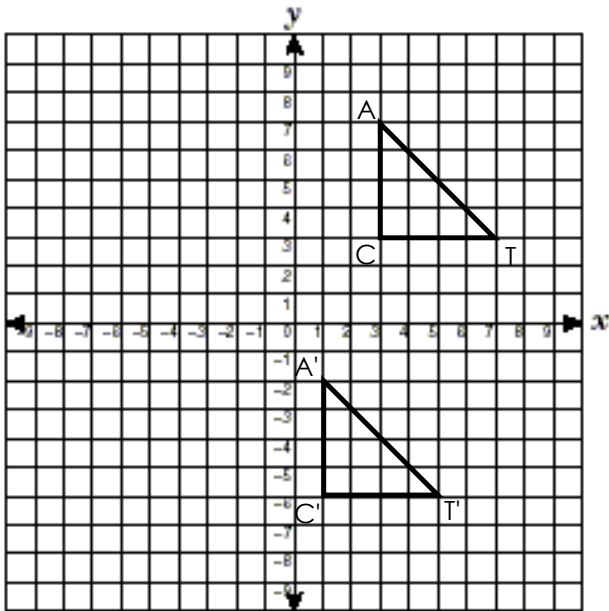
B(____,____) → B'(____,____)

C(____,____) → C'(____,____)

D(____,____) → D'(____,____)

Is □ ABCD ≅ □ A'B'C'D'? Explain using the properties of rigid motions.

Skill 2: Describing Translations



Describe a transformation that maps

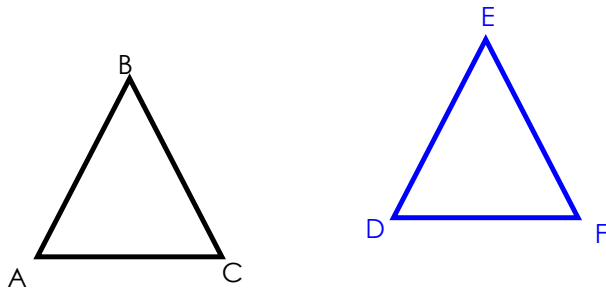
$\triangle CAT$ onto $\triangle C'A'T'$.

Prove $\triangle CAT \cong \triangle C'A'T'$ using the properties of rigid motions.

Describing Translations without the Coordinate Plane

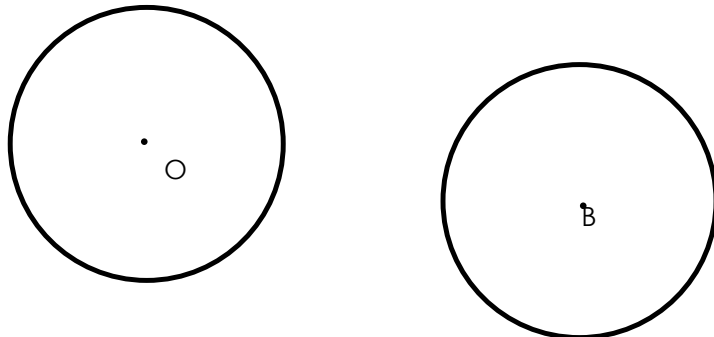
If you are performing a translation of a shape not on a grid you can no longer say "move one unit up and three units to the right" because without a grid there are no units. You must define the line of translation yourself.

Describe a translation that maps $\triangle ABC$ onto $\triangle DEF$



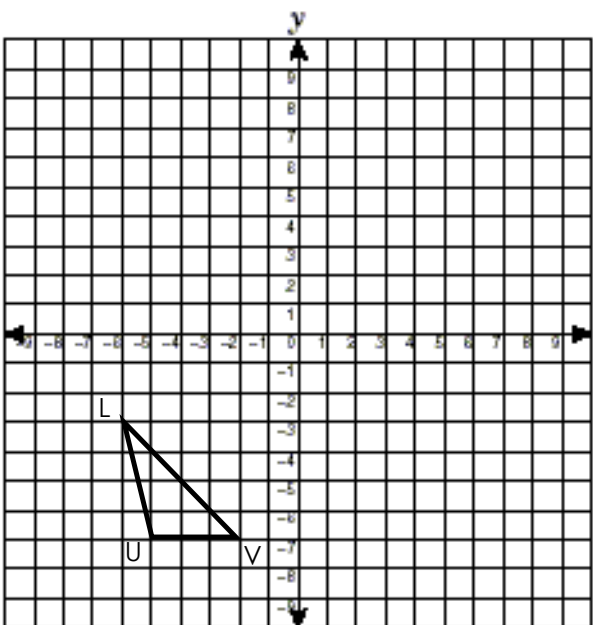
A _____
 along line _____
 will map _____ onto _____.

Describe a translation that maps circle O onto circle B



A _____
 along line _____
 will map _____ onto _____.

Independent Practice



$\triangle LUV$ is translated 7 units up and 8 to the right.
What is the coordinate of $\triangle L'U'V'$?

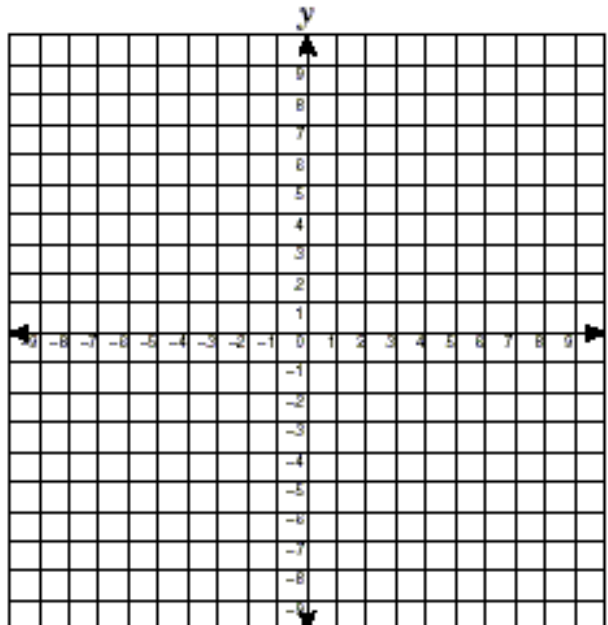
→

→

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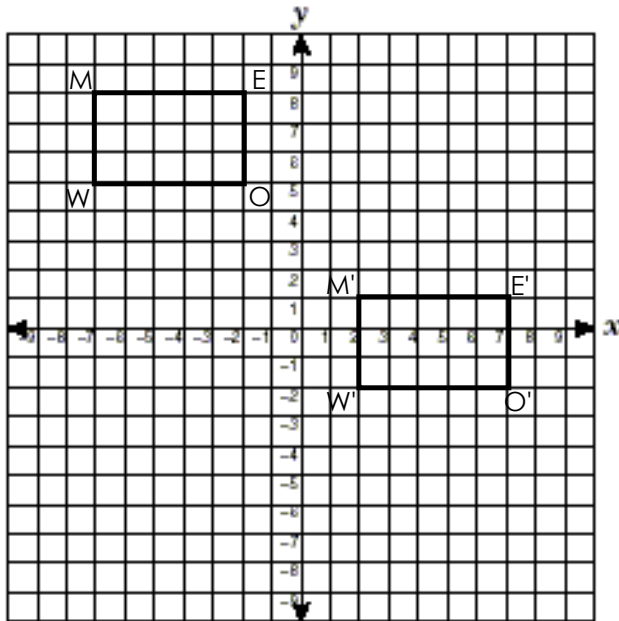
Is $\triangle LUV \cong \triangle L'U'V'$? Explain using the properties of rigid motions.

Given $\square ABCD$ with $A(3,-4)$, $B(4,2)$, and $C(7,-4)$, $D(8,2)$. A translation of $(x,y) \rightarrow (x-5, y+2)$ is applied to $\square ABCD$. What are the coordinates of $\square A'B'C'D'$?



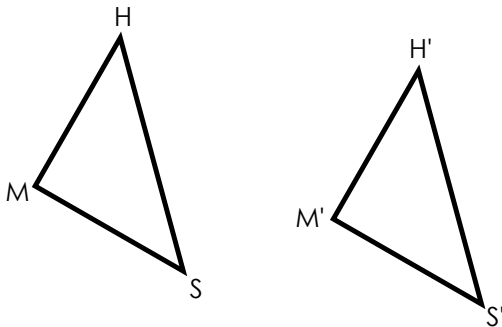
Is $\square ABCD \cong \square A'B'C'D'$? Explain using the properties of rigid motions.

Describe a transformation that maps rectangle MEOW onto rectangle M'E'O'W'



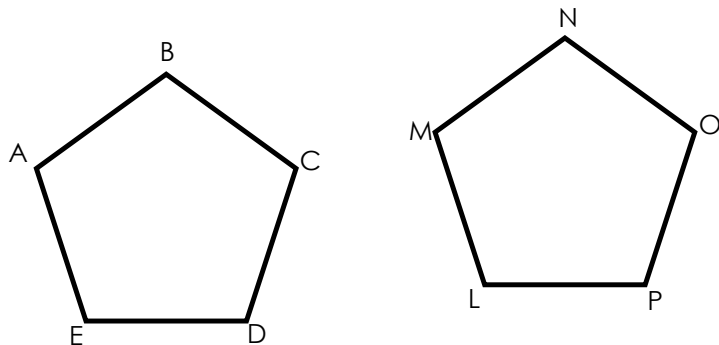
Using the properties of rigid motions, explain how you know rectangle MEOW is congruent to rectangle M'E'O'W'

Describe a translation that maps $\triangle SMH$ onto $\triangle S'M'H'$



A _____
 along line _____
 will map _____ onto _____.

Describe a translation that maps pentagon ABCDE onto MNOPL



Use the template from the last example!