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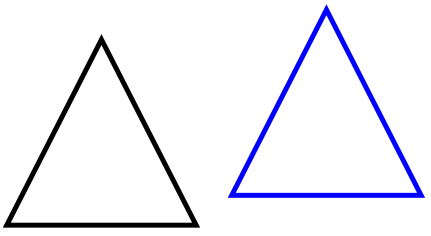
1.2 Introduction to Transformations

You learned this once in middle school, but that was like a million years ago.

Transformations

A transformation is a change in the location or size of a figure.



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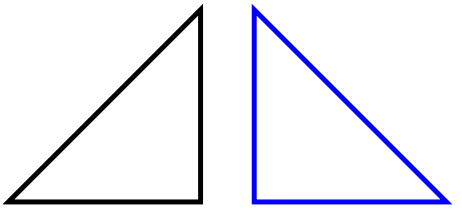

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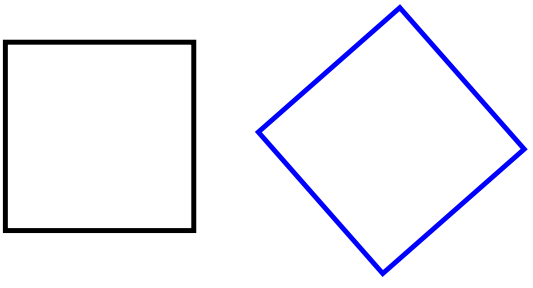

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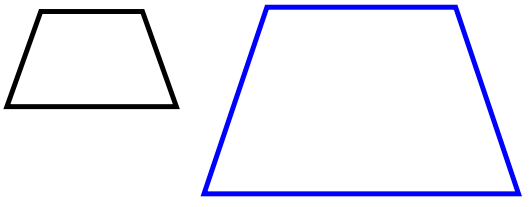

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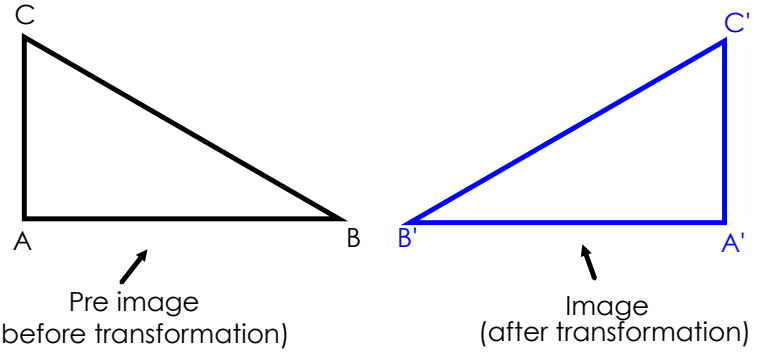
Rigid Motions

A **rigid motion** is a transformation where the lengths of the sides and the angles of the figure stay the same



Is this an example of a rigid motion?

Yes, a _____ is a rigid motion because

_____

_____

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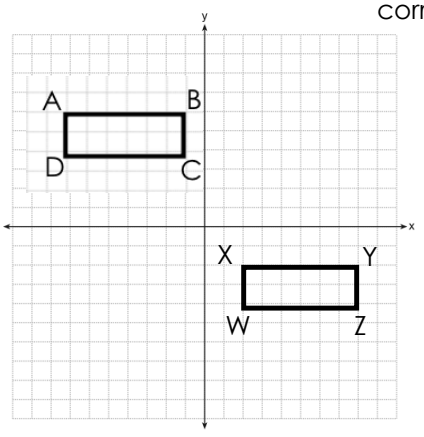
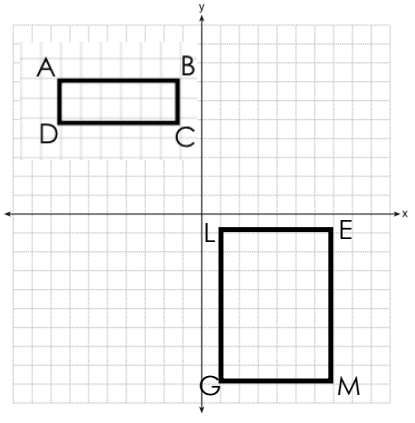
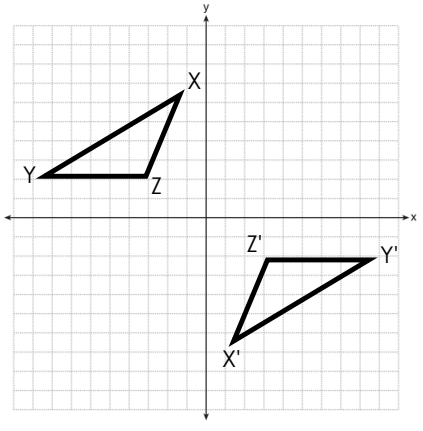
Congruence Shapes

Shapes are congruent if **all corresponding angles** and all corresponding **side lengths** are the same





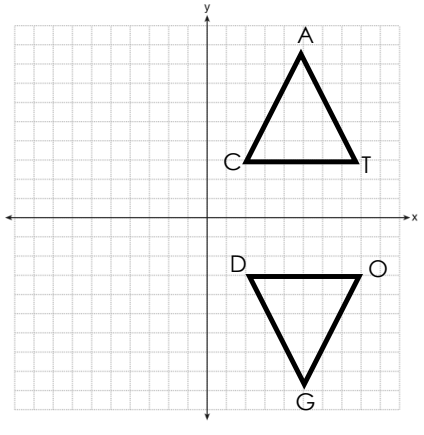
Two figures are congruent if there is a set of rigid transformations that map the figures onto each other



1.State the transformation that maps △XYZ onto △ X'Y'Z'

2. Explain why triangle △XYZ is congruent to triangle △ XYZ.

A _____ is a rigid motion and rigid motions preserves side lengths and angle measures



1.State the transformation that maps △CAT onto △DOG

2. Using the properties of rigid transformations, explain why triangle △CAT is congruent to triangle △DOG.

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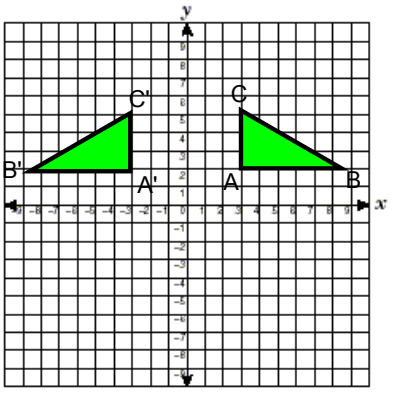
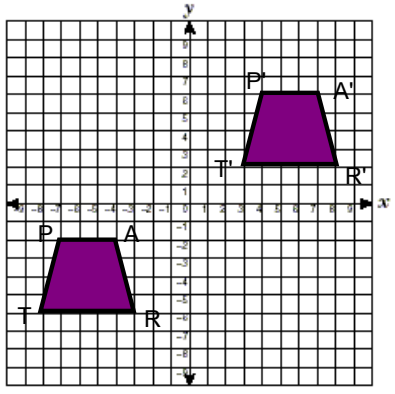
Independent Practice

In each example, identify the transformation and state if it is a rigid motion or not.



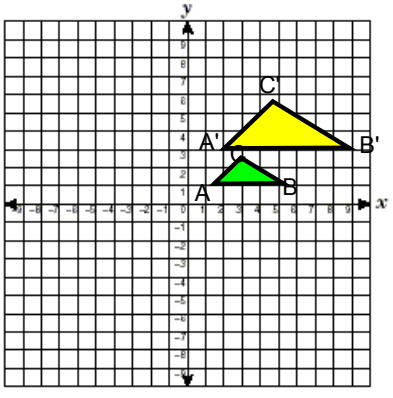
Transformation:_____

Is this a rigid motion?_____



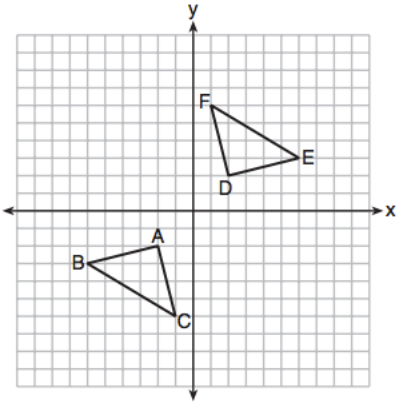
Transformation:_____

Is this a rigid motion?_____



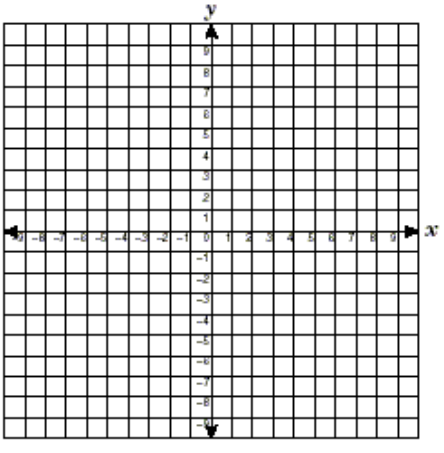
Transformation:_____

Is this a rigid motion?_____



Transformation:_____

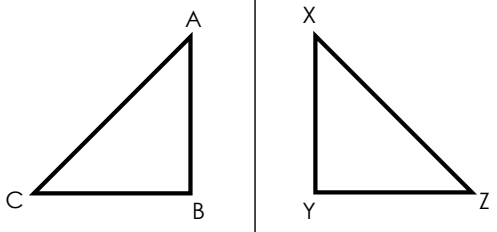
Is this a rigid motion?_____



Draw an example of a rigid motion on the coordinate plane to the left.

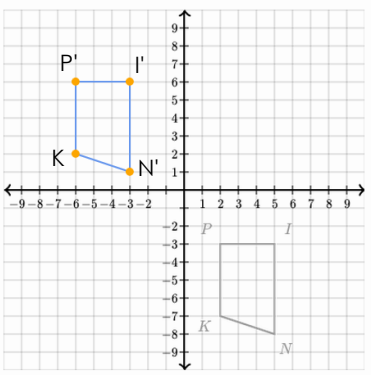
Explain why your example is a rigid motion

Proving Congruence with Rigid Transformations



1. State the transformation that maps △ ABC onto △ XYZ

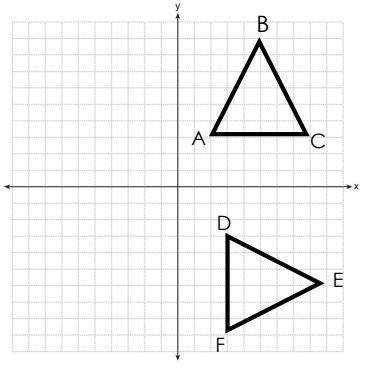
2. Use the properties of rigid motions to explain why △ABC ≅ △XYZ



1. State the transformation that maps PINK onto P'I'N'K'

2. Explain why PINK is congruent to P'I'N'K' using the properties of rigid motions.

△ ABC and △ DEF are graphed on the coordinate plane.
Use the properties of rigid motions to explain why △ABC ≅ △ DEF



△ YWE and △ DEF are graphed on the coordinate plane.
Use the properties of rigid motions to explain why △YWE ≅ △ DEF