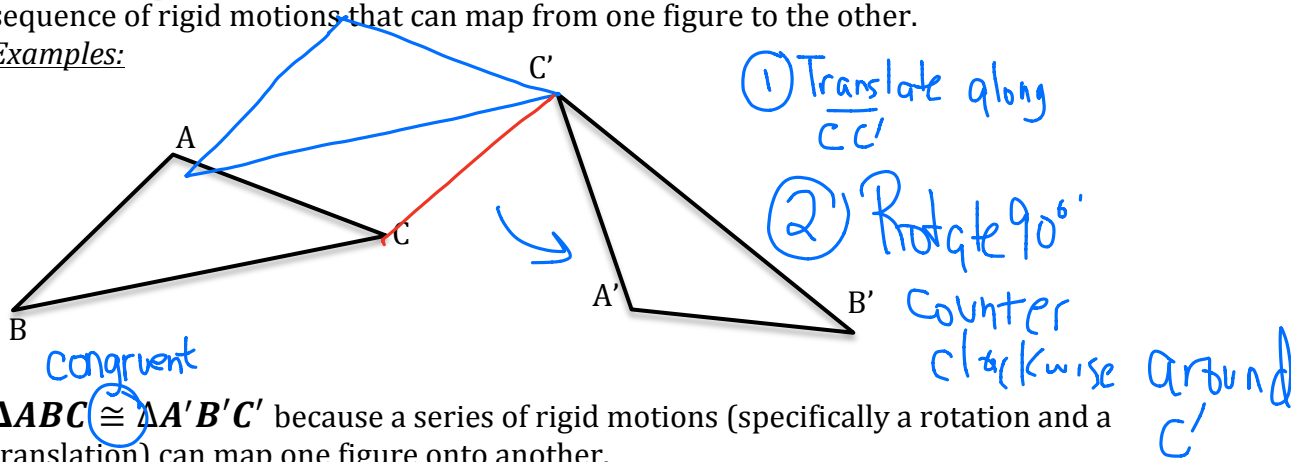


LEARNING OBJECTIVE: We will define the concept of congruence and determine if geometric figures are congruent. (G8M2L8)

CONCEPT DEVELOPMENT:

Congruence: Two geometric figures are congruent to each other if there is a sequence of rigid motions that can map from one figure to the other.

Examples:



$\triangle ABC \cong \triangle A'B'C'$ because a series of rigid motions (specifically a rotation and a translation) can map one figure onto another.



$S \cong S'$ because a series of rigid motions can map one figure onto another.

Non-example:

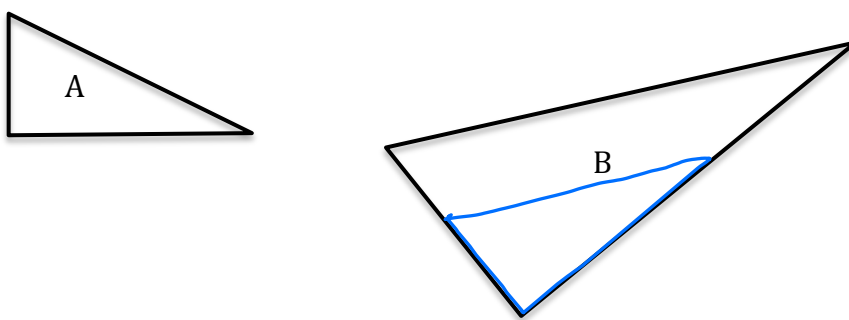
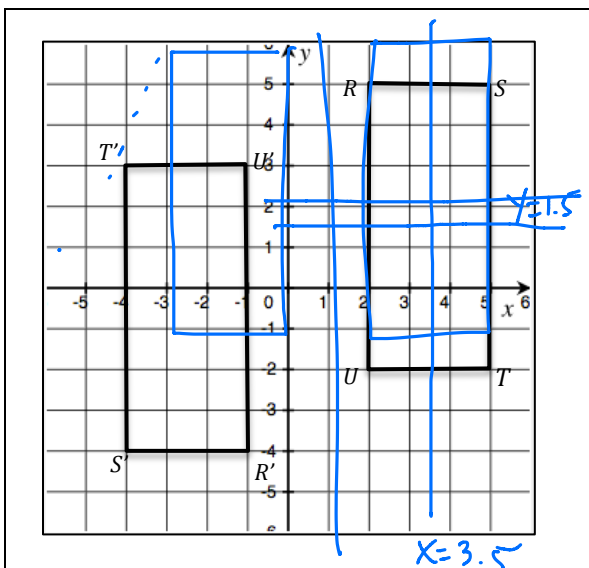


Figure A is NOT congruent to Figure B because you CANNOT map one figure onto another with a series of rigid motions.

GUIDED PRACTICE:

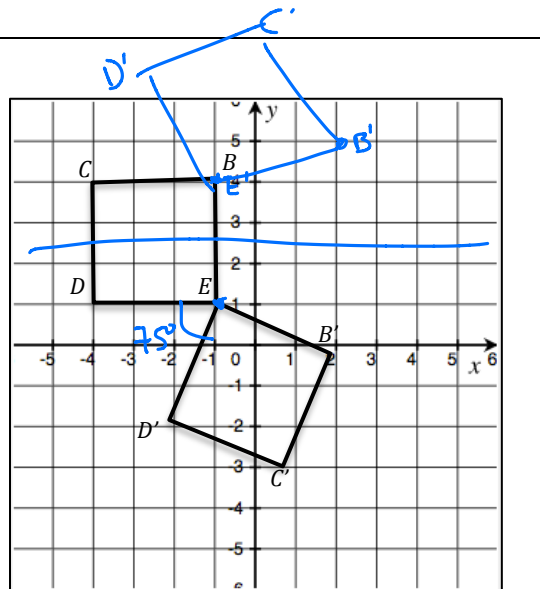
Steps for Determining Congruence of Geometric Figures

1. Study the two figures carefully.
2. Try to perform a sequence of rigid motions to determine if one figure maps onto the other.
3. If a sequence of rigid motions exists, the two objects are congruent. If not, the objects are NOT congruent.



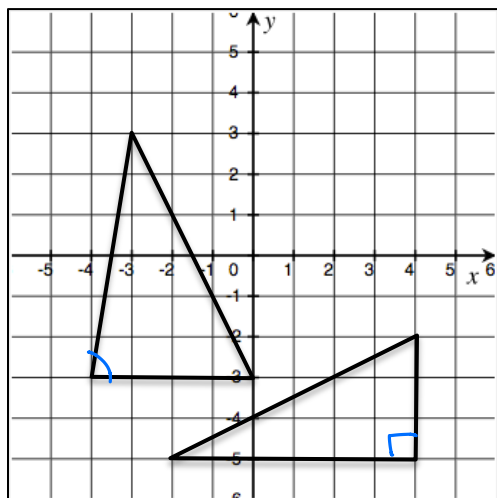
Congruent? How do you know?

$T(-1, -1)$
Rotate 180° around $(0, 0)$



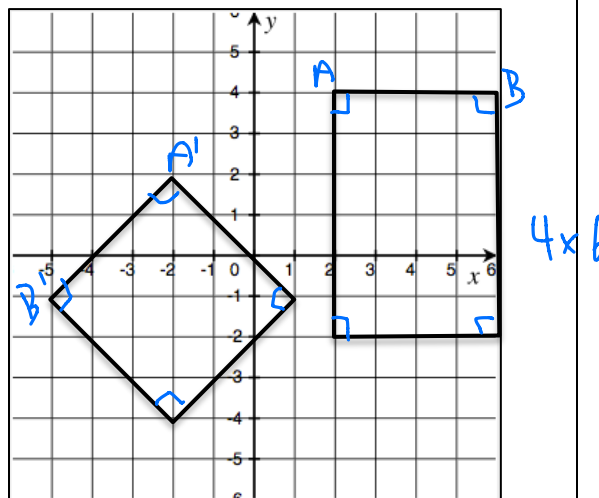
Congruent? How do you know?

Rotate around $(-1, 1)$ 75°
Reflect across \overline{DE}



Congruent? How do you know?

No, there are no rigid motions that map one Δ to the other.



Congruent? How do you know?

No. There's no rigid motions that map one rectangle onto another.

NAME: _____

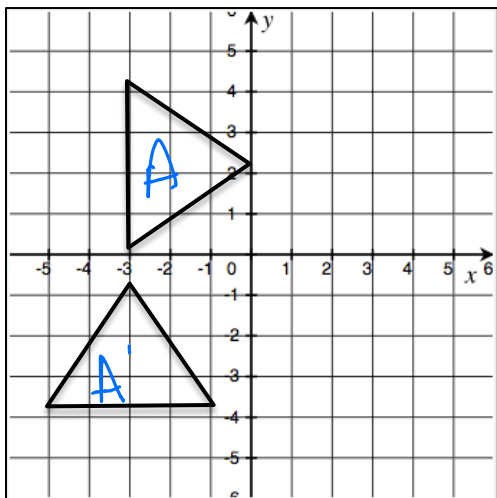
Math _____, Period _____

Mr. Rogove

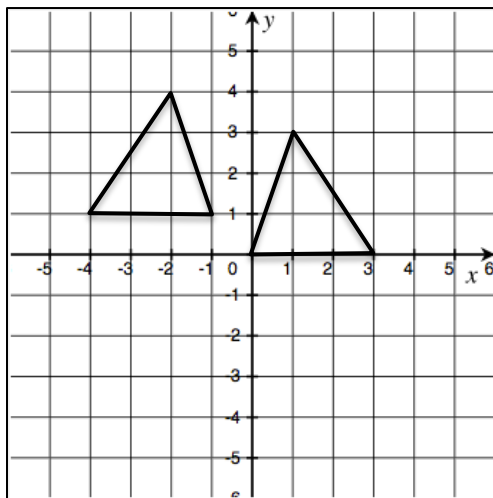
Date: _____

INDEPENDENT PRACTICE:

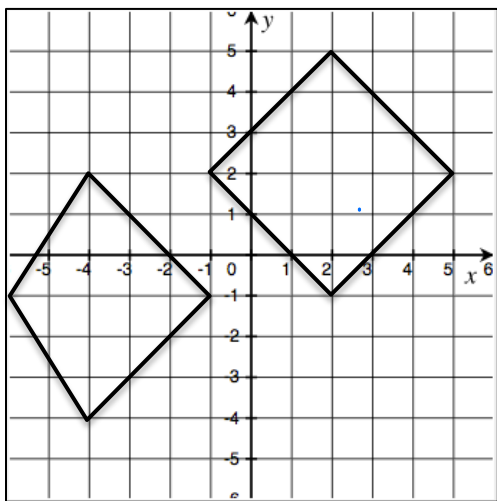
State whether or not the two figures are congruent, and how you can tell one way or another.



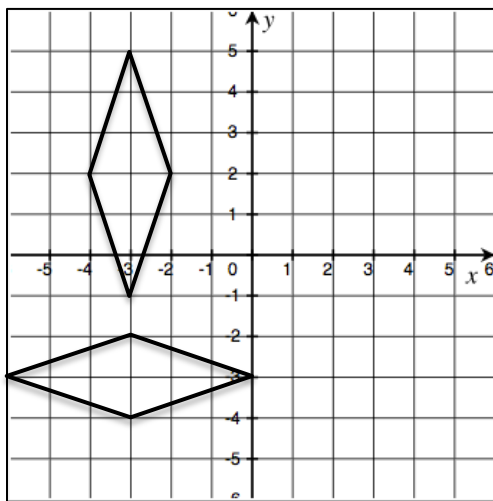
Yes. Rotate, translate



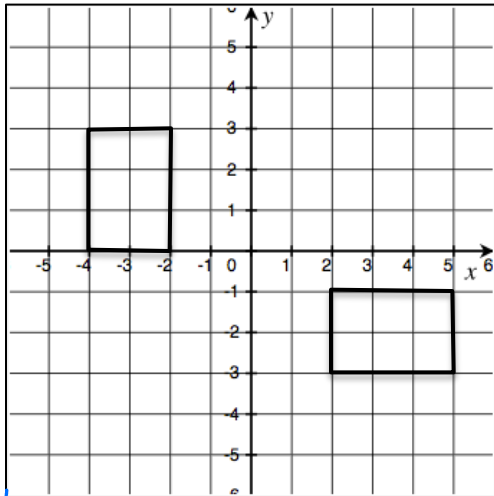
Yes, reflect & translate



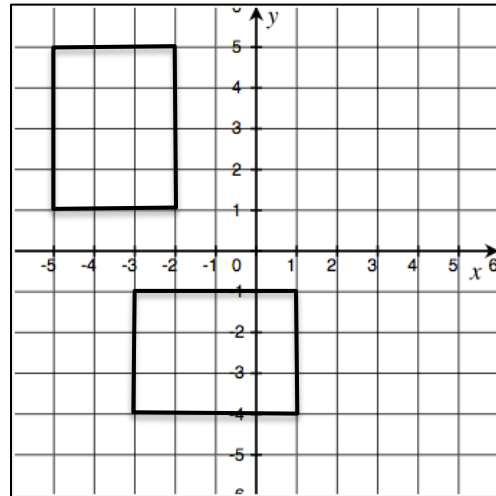
No. No rigid motions map one to another



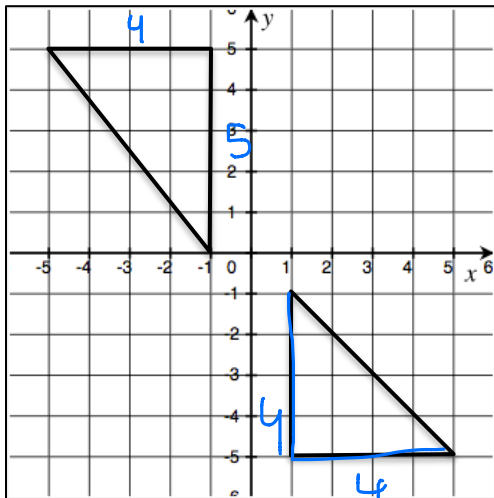
Congruent Rotate & translate



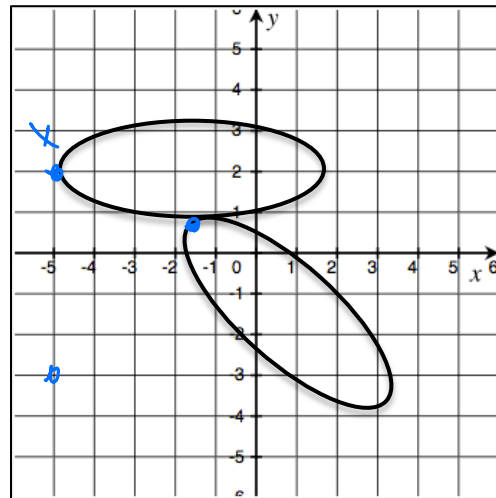
Yes. Rotate $\frac{1}{2}$ translate



Yes. Rotate $\frac{1}{2}$ translate



No. No rigid motions map the \triangle to the other.



Yes! Translation & rotation.

NAME: _____

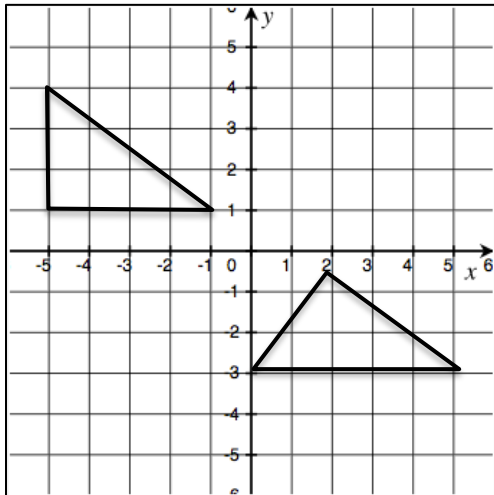
Math _____, Period _____

Mr. Rogove

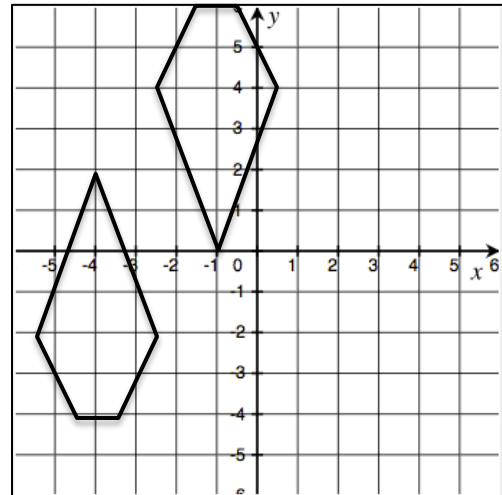
Date: _____

ACTIVATING PRIOR KNOWLEDGE:

We can identify the sequence of rigid motions needed to get from one figure to another.



What would you do to map one figure onto the other?



What would you do to map one figure onto the other?

CLOSURE:

Give exit ticket from ENY lesson 11.

TEACHER NOTES: