Carrie made the shape on the left, and Stephanie made the shape on the right. Each shape uses 5 squares.

<u>Direction</u>: **Select all the true statements by placing an X in the box.**

❑ **The smallest square in Carrie's design is <u>congruent</u> to the smallest square in Stephanie's design.**

❑ **Carrie's design is <u>congruent</u> to Stephanie's design.**

❑ **Carrie's design is a <u>reflection</u> of Stephanie's design.**

→ *Describe why your statement(s) marked with an X are true:*

_____

_____

Direction: Fill in the blank that makes each sentence true. Use the following three words:

always, sometimes, **or** *never*.

1. Two squares with the same side lengths are

    _____ congruent.

2. Two rectangles with the same perimeter are

    _____ congruent.

3. Two rectangles with the same area are

    _____ congruent.

Use the grid on the right to justify your answers
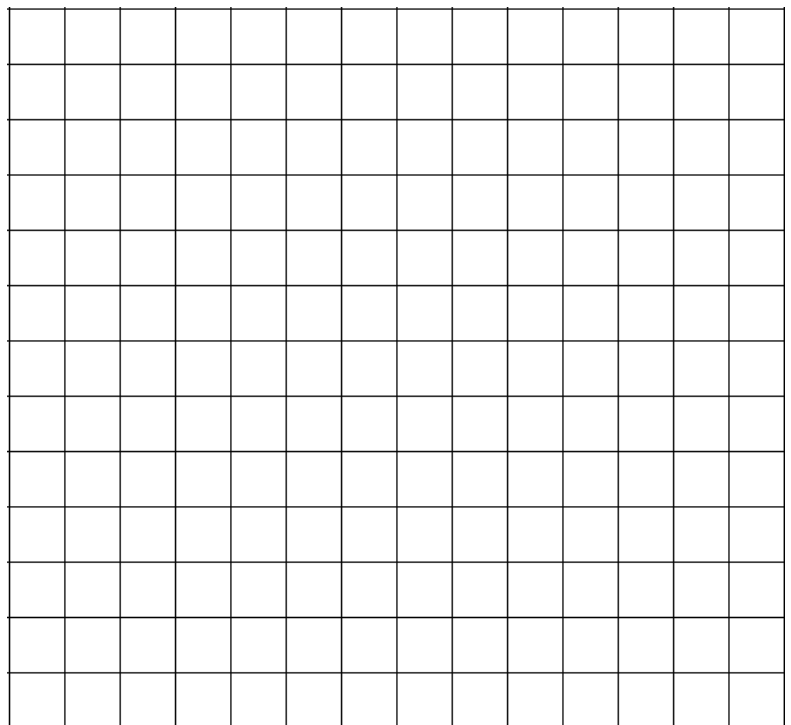
Lines **AB** and **CD** are parallel. Find the measures of the three angles in triangle **ABF** .

C

154°

E

39°

F

D

A

B
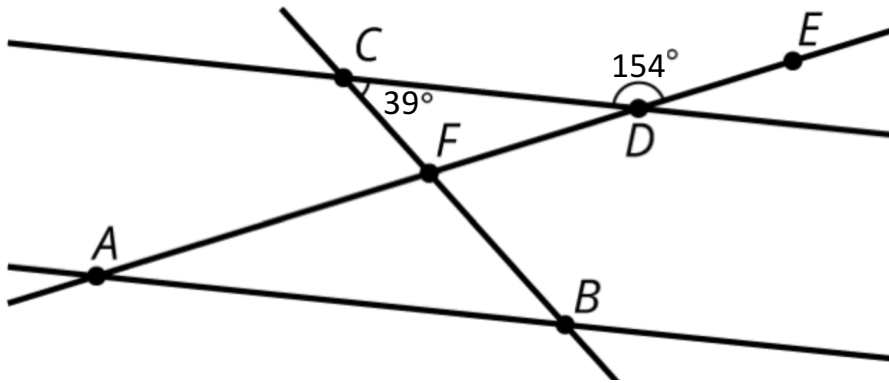
- o **The measure of angle CFD is _____ degrees.**
- o **The measure of angle CDF is _____ degrees.**
- o **The measure of angle FAB is _____ degrees.**
- o **The measure of angle FBA is _____ degrees.**
- o **The measure of angle AFB is _____ degrees.**

Which of the following transformations demonstrates that Polygon A is congruent to Polygon B?

DIRECTION: (Place an X next to any TRUE statement)

3

4

A

1

2

B
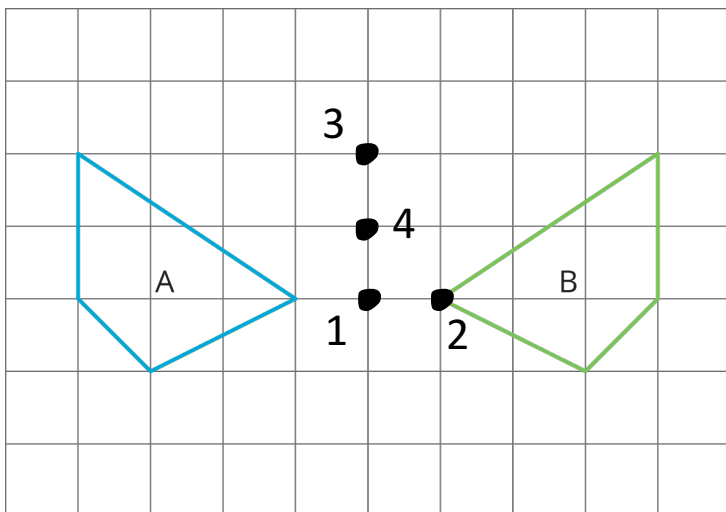
- ❑ **If Polygon A is reflected across Point 1 , it matches up perfectly with Polygon B.**
- ❑ **If Polygon A is rotated 180 degrees clockwise around point 3, it matches up perfectly with Polygon B.**
- ❑ **If Polygon A is translated 2 units right and reflected across Point 2, it matches perfectly with Polygon B.**
- ❑ **If Polygon A is translated 1 unit down, rotated 90 degrees around Point 4, then translated 1 unit up, it matches perfectly with Polygon B.**
- ❑ **If Polygon A is rotated 180 degrees counter-clockwise around point 4 and, it matches perfectly with Polygon B.**

Which of these sequences of transformations would __NOT__ return a shape to its original position?

Direction: **Place an X in any box that would not return shape to its original position after the transformation has been performed.**

- ❑ Translate 5 units up, then 5 units down.

- ❑ Reflect over x-axis, then reflect over the x-axis again.

- ❑ Translate 1 unit to the right, then 4 units to the left, then 3 units to the right.

- ❑ Rotate 90° clockwise around center **C** , then rotate 180° clockwise around **C** again.

- ❑ Reflect Point (2,2) across the x-axis, then reflect its image across the y-axis.

- ❑ Rotate 90° clockwise around center **C** , then rotate 90° counter-clockwise around **C** again.

- ❑ Translate 3 units to the right, then 4 units down, then 3 units to the left, the 4 units up.

- ❑ Rotate 180° clockwise around center **C** , then rotate 180° clockwise around **C** again.