Warmup 2/(Sum of the numbers on **Created by Mr. Lischwe** 1) What sequence of transformations could map shape "A" onto shape "B"? <u>Be specific!</u> R



2) Draw a capital "R" like so:

- Draw the R after a 90° clockwise rotation.
 - Draw the R after a 180° clockwise rotation.
 - Draw the R after a 270° clockwise rotation.
 - Draw the R using a <u>vertical</u> line of reflection.
 - Draw the R using a <u>horizontal</u> line of reflection.
- (Challenge) Draw the R after a diagonal line of reflection.

Don't turn your rotations into reflections...



Which one is the correct rotation around the origin?



Rotations around OTHER points than the origin.. o Rotating around the origin:



Rotations around OTHER points than the origin..

• Rotate around one of the vertices...



Rotations around OTHER points than the origin..o Around a different vertex...



Rotations around OTHER points than the origin..

• Around a different vertex...



Rotations around OTHER points than the origin.. o Around the point (2, 1)





If you're still struggling with rotations...

• I put a link on my website to a good Youtube video that explains the strategy.

Challenge: Reflect the figure across the line!



Table of Contents (2nd Semester)

- p. 1 Exponent Basics (1.2)
- p. 2 Multiplying and Dividing Powers (1.3)
- p. 3 Power to a Power (1.4)
- p. 4 Zero & Negative Exponents (1.5)
- p. 5 Scientific Notation (1.6)
- p. 6 Calcluating with Scientific Notation (1.7)
- p. 7 Angle Basics
- p. 8 Angles formed by Parallel Lines (5.1)
- p. 9 Transformations (6.1 6.3)
- p. 10 Rotations (Handout)
- p. 11 Reverse Transformations

Reverse Transformations

11

Today's Objectives:

• Perform translations, reflections, and rotations <u>in reverse</u>!

ON GRAPH 1

- A triangle was translated **4 units up** and **2 units left**. The image is **A'(-2, 7) B'(-1, 9) C'(1, 7).** Draw the original triangle **ABC**.
- In reverse: 2 right and 4 down



ON GRAPH 1

- A triangle was translated **4 units up** and **2 units left**. The image is **A'(-2, 7) B'(-1, 9) C'(1, 7).** Draw the original triangle **ABC**.
- In reverse: 2 right and 4 down

ALSO ON GRAPH 1

• A quadrilateral was reflected across the x-axis. The image is **D'(-8, 5) E'(-8, 7) F'(-6, 7) G'(-4, 3).** Draw the original quadrilateral **DEFG**.

• In reverse: reflect back across the x-axis



Counterclockwise and clockwise...

It's <u>very</u> easy to mix these up if you're not careful.

• PICTURE A CLOCK!!!

ON GRAPH 2

• A triangle was rotated **90° clockwise**. The image is **A'(2, 5) B'(2, 9) C'(4, 5)**. Draw the original triangle **ABC**.

o In reverse: 90° counterclockwise





ON GRAPH 3

A triangle was rotated 270° counterclockwise.
The image is D'(5, -7) E'(6,-4) F'(7, -7). Draw the original triangle DEF.

o In reverse: 270° clockwise



ON GRAPH 4

- A triangle was reflected across the y-axis and then translated right 3 units. The image is A'(5, 4) B'(6, 2) C'(9, 2). Draw the original triangle ABC.
- In reverse: translate <u>left</u> 3 units, then reflect across the y-axis

ON GRAPH 5

- A rectangle was translated 3 units right and 5 units down, and then rotated 90° counterclockwise. The image is D'(3,-7) E'(8,-7) F'(8, -5) G'(3, -5). Draw the original rectangle DEFG.
- In reverse: rotate 90° clockwise, then translate 5 up and 3 left



ON GRAPH 4

- A triangle was reflected across the y-axis and then translated right 3 units. The image is A'(5, 4) B'(6, 2) C'(9, 2). Draw the original triangle ABC.
- In reverse: translate <u>left</u> 3 units, then reflect across the y-axis

ON GRAPH 5

- A rectangle was translated 3 units right and 5 units down, and then rotated 90° counterclockwise. The image is D'(3,-7) E'(8,-7) F'(8, -5) G'(3, -5). Draw the original rectangle DEFG.
- In reverse: rotate 90° clockwise, then translate 5 up and 3 left

In reverse: rotate 90° clockwise, then translate 5 up and 3 left

A rectangle was translated **3 units right** and **5 units down**, and then rotated **90°** counterclockwise.



ON GRAPH 6

- A trapezoid was translated 5 units down, then reflected across the x-axis and then rotated 270° clockwise. The image is A'(1, 6) B'(1, 1) C'(3, 1) D'(3, 4). Draw the original trapezoid ABCD.
- In reverse: rotate 270° counterclockwise, then reflect across the x-axis, then translate 5 units up.

In reverse:

- rotate 270° counterclockwise
- then reflect across the x-axis
- then translate 5 units up.

A trapezoid was translated 5 units down, then reflected across the x-axis and then rotated 270° clockwise.



HOMEWORK:

• Same as yesterday