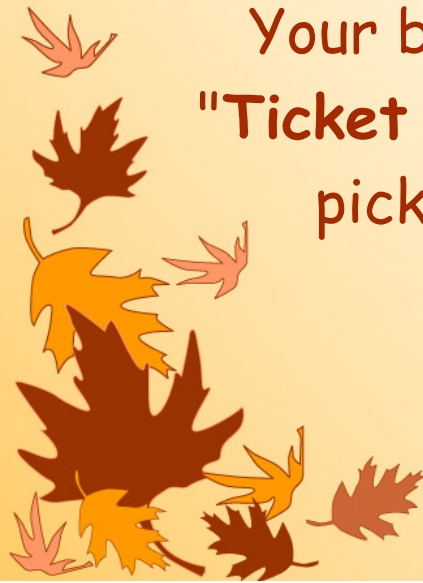


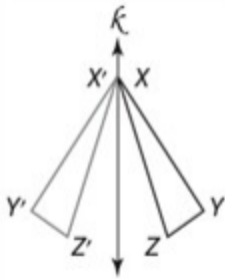
Please see the board for today's agenda, and get out the necessary items (notes, homework, etc.).

Your bellwork for today is the "Ticket IN in the door" that you picked up from the table.



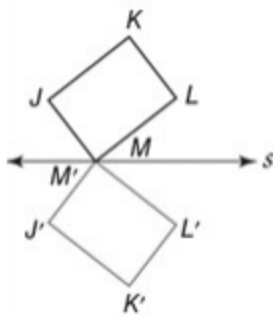
10.

ANSWER:



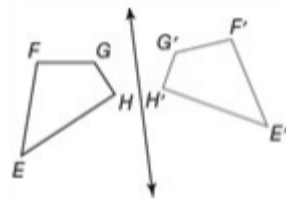
11.

ANSWER:



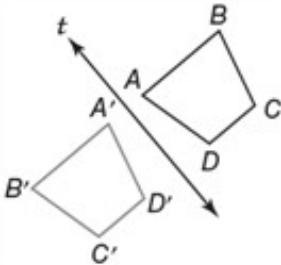
12.

ANSWER:



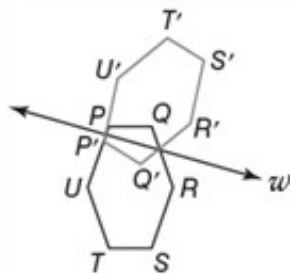
13.

ANSWER:



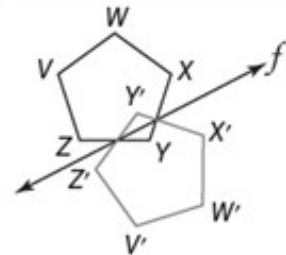
14.

ANSWER:



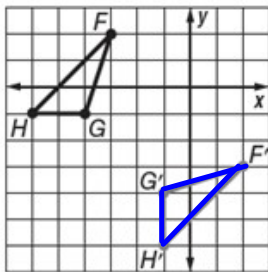
15.

ANSWER:



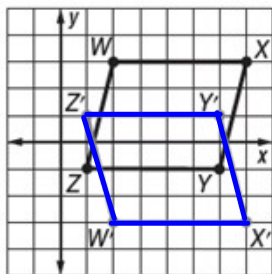
26. $\triangle FGH$ with vertices

ANSWER:



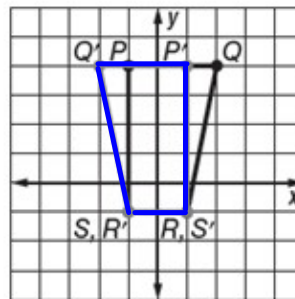
27. $\square WXYZ$ with vertices

ANSWER:



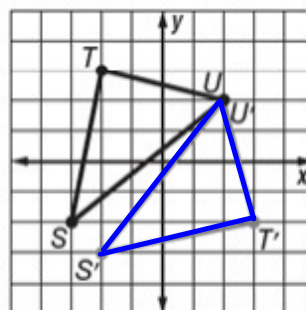
28. trapezoid $PQRS$ with vertices
the y -axis

ANSWER:



29. $\triangle STU$ with vertices $S(-3, -2)$,

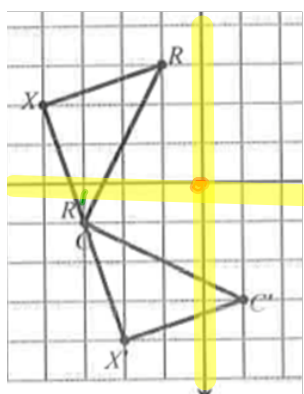
ANSWER:



THINK

The figures below have all been rotated 90° counterclockwise about the origin. Write down the ordered pairs of the following rotations.

What pattern do you notice happens each time between the coordinates of the preimage and the coordinates of the image?



Rotation 1	
Preimage	Image
X(<u>4</u> , <u>2</u>)	X'(,)
R(<u>-1</u> , <u>3</u>)	R'(,)
C(<u>-3</u> , <u>-1</u>)	C'(,)

Pair - Take your notes with you!

Partner up with someone who was born in the same month as you.

You only have 20 seconds to find a partner. If you can't find someone, pair up with the nearest individual. Wait quietly for the next set of instructions :)

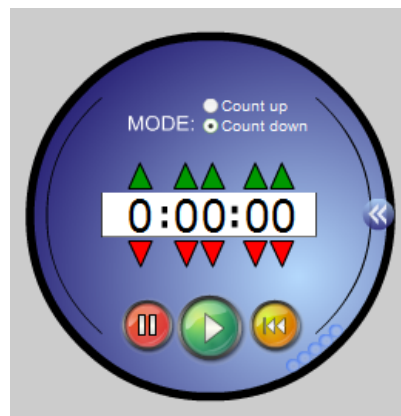
Share

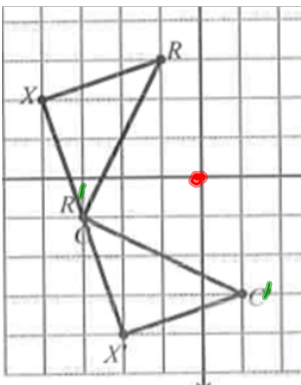
Each partner will share what he/she discovered when comparing the coordinates of the preimage to the coordinates of the image.

Allow each person to speak for 15 seconds. Return to your seat when the timer goes off.

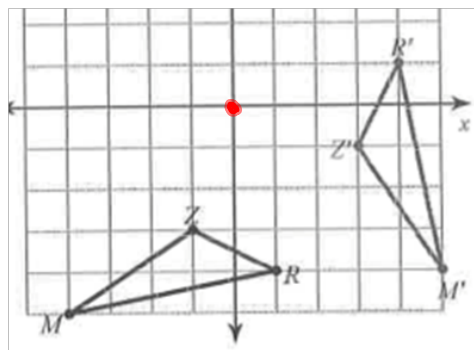
Suggested talking points:

- Where did you start?
- Did you not notice a pattern?
- Do you and your partner disagree?
Try to come to a consensus!

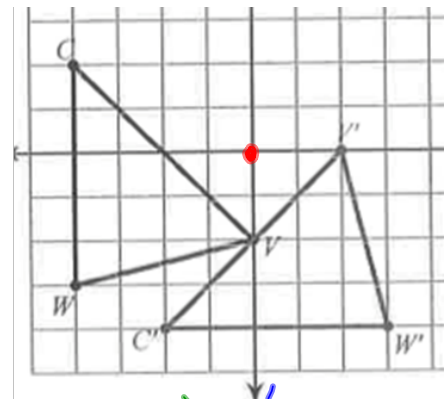




$$\begin{aligned} X(1, 2) &\rightarrow X'(-2, -4) \\ R(-1, 3) &\rightarrow R'(-3, -1) \\ C(-3, -1) &\rightarrow C'(1, -3) \end{aligned}$$



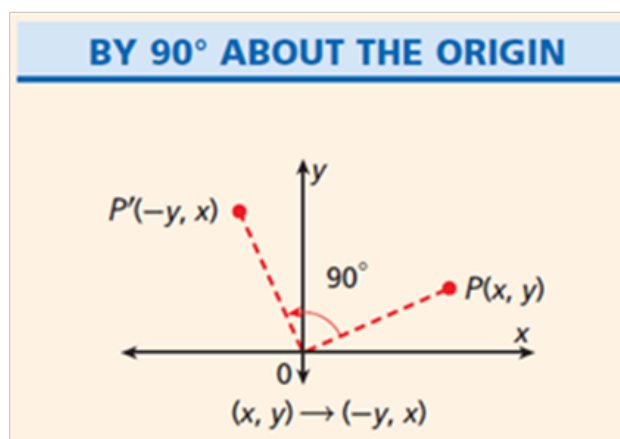
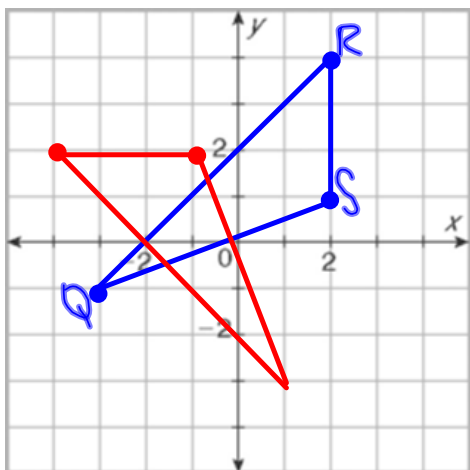
$$\begin{aligned} M(-4, 5) &\rightarrow M'(5, -4) \\ R(1, -4) &\rightarrow R'(4, 1) \\ Z(-1, 3) &\rightarrow Z'(3, -1) \end{aligned}$$



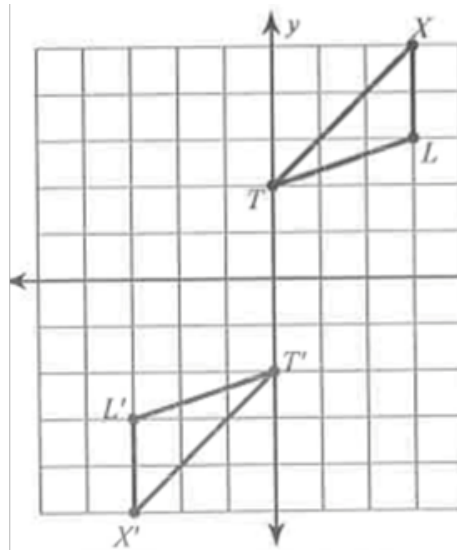
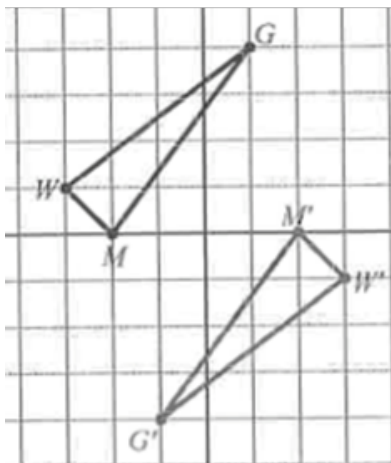
$$\begin{aligned} W(-4, -3) &\rightarrow W'(3, -4) \\ C(-4, 2) &\rightarrow C'(-2, 4) \\ V(0, -2) &\rightarrow V'(2, 0) \end{aligned}$$

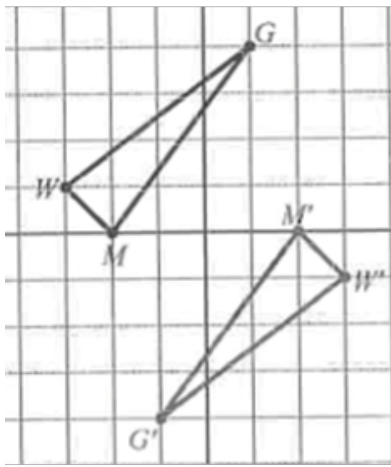
Example 2: Rotate $\triangle QRS$ with vertices $Q(-3, -1)$, $R(2, 4)$, $S(2, 1)$ by 90° about the origin.

$$Q'(1, -3) \quad R'(-4, 2) \quad S'(-1, 2)$$

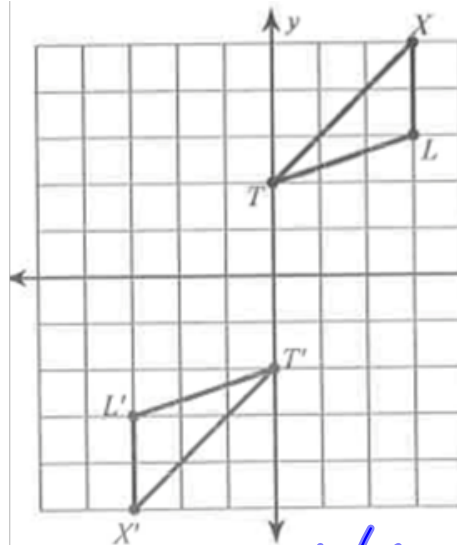


The figures below have all been rotated 180° counterclockwise about the origin. Write down the ordered pairs of the following rotations. What pattern do you notice happens each time between the coordinates of the preimage and the coordinates of the image?



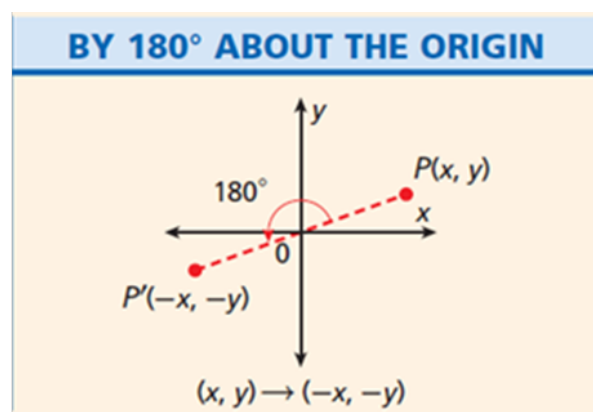
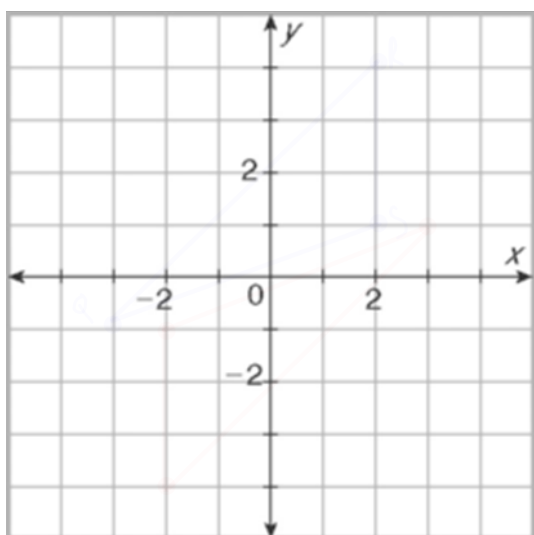


$$\begin{aligned} W(-3, 1) &\rightarrow W'(3, -1) \\ M(-2, 0) &\rightarrow M'(2, 0) \\ G(1, 4) &\rightarrow G'(-1, -4) \end{aligned}$$



$$\begin{aligned} X(3, 5) &\rightarrow X'(-3, -5) \\ L(3, 3) &\rightarrow L'(-3, -3) \\ T(0, 2) &\rightarrow T'(0, -2) \end{aligned}$$

Example 3: Rotate $\triangle QRS$ with vertices $Q(-3, -1)$, $R(2, 4)$, $S(2, 1)$ by 180° about the origin.

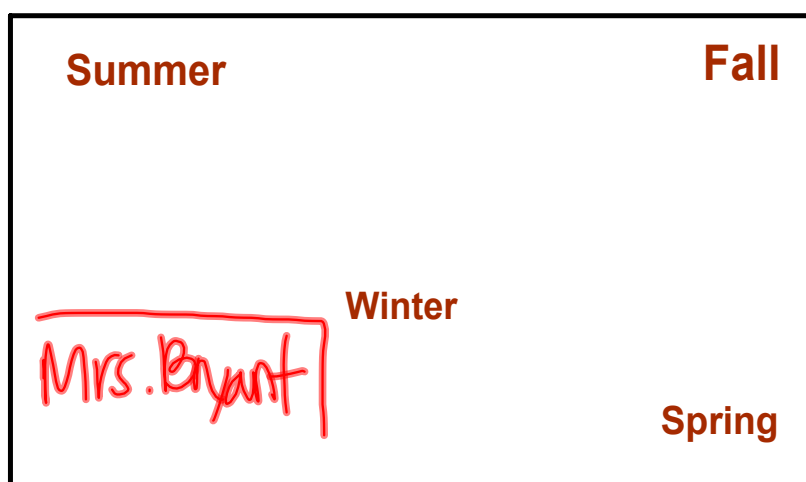


Review

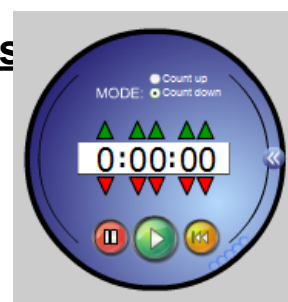
Take a few moments to review the different transformations in the coordinate plane.

Make a "cheat sheet" to help you organize the different rules (patterns) we discovered regarding the coordinates of the preimage and image.

What is your favorite season?

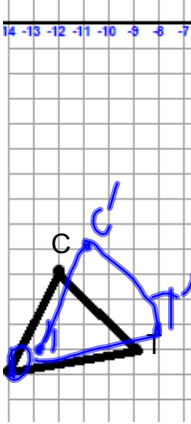
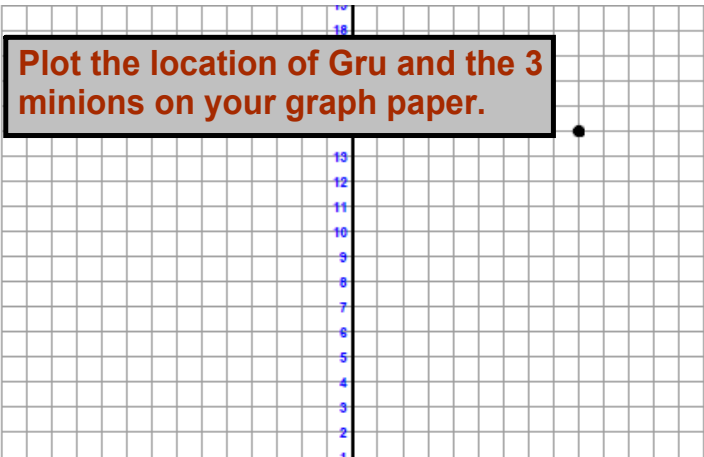


Share what you remember about transformations with someone in your group.



- The minions stick together in triangle formation throughout their mission.
- Create a way for the minions to reach Gru by translating, rotating, and reflecting their triangle until they have ***Gru surrounded*** and safe.
- The minions must complete *at least one* of each of the following:
 - Reflection over the x – axis OR y – axis
 - Reflection over the line $y = x$
 - Translation
 - Rotate 180° OR 90° about the origin





Transformation	D	C	T
Pre-image	$(-14, -14)$	$(-12, -10)$	$(-9, -13)$
Translate by $\langle 1, 1 \rangle$ Reflect by \dots	$D'(-13, -13)$	$C'(-11, -9)$	$T'(-8, -12)$
	D''	C''	T''
	D'''	C'''	T'''
	D''''	C''''	T''''
	D^5	C^5	T^5
	D^6	C^6	T^6
	D^7	C^7	T^7
	D^8	C^8	T^8