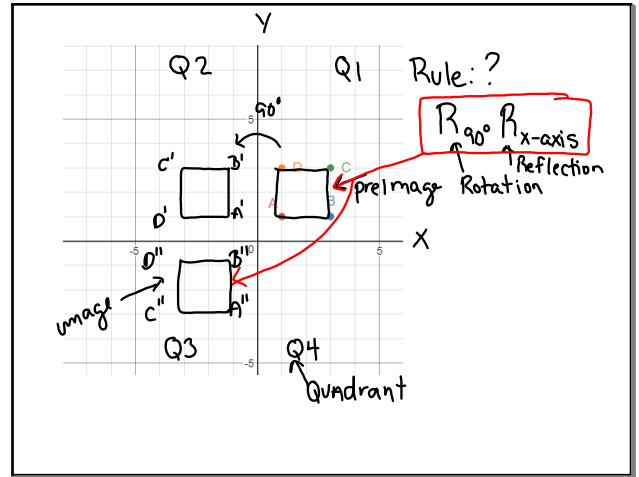


August 6, 2018

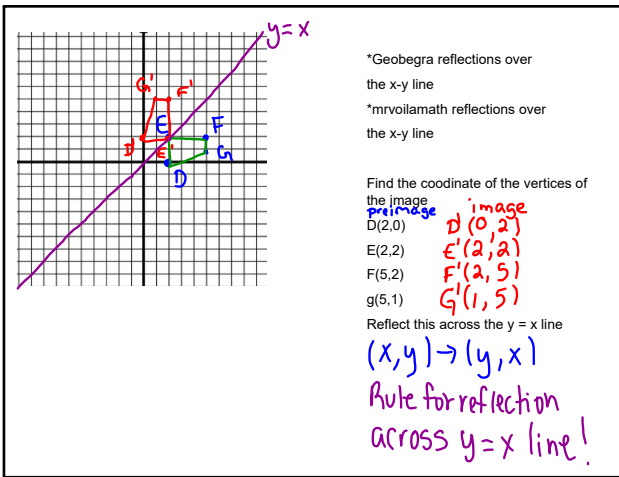
Rotate a square located at (1,1) (3,1) (3,3) and (1,3) in to quadrant 2, then reflect the square across the x-axis. Write a rule for the transformations.

Today -  
geogebra reflection  
find the  $x = y$  line & the  $x = -y$  line  
reflect over these lines  
Study Guide for tomorrow's quiz



Aug 6-7:45 AM

Aug 6-10:26 AM



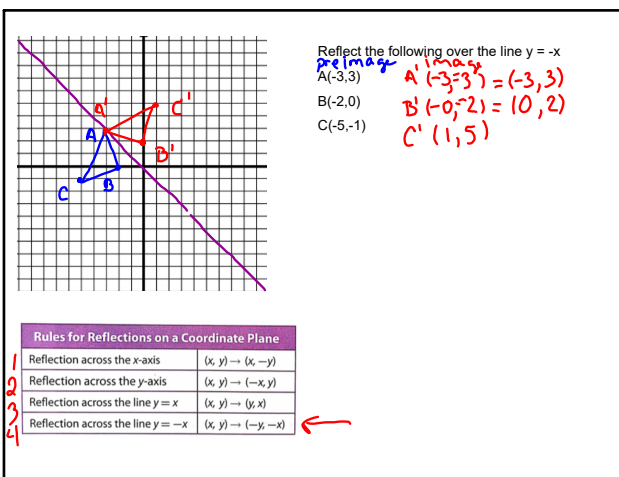
Aug 6-7:50 AM

**Explain 2 Drawing Reflections on a Coordinate Plane**

The table summarizes coordinate notation for reflections on a coordinate plane.

Rules for Reflections on a Coordinate Plane	
Reflection across the x-axis	$(x, y) \rightarrow (x, -y)$
Reflection across the y-axis	$(x, y) \rightarrow (-x, y)$
Reflection across the line $y = x$	$(x, y) \rightarrow (y, x)$
Reflection across the line $y = -x$	$(x, y) \rightarrow (-y, -x)$

Aug 6-11:13 AM



Aug 6-7:52 AM

Your Turn

$\triangle A'B'C'$  is the image of  $\triangle ABC$  under a reflection. On a coordinate grid, draw  $\triangle ABC$ ,  $\triangle A'B'C'$ , and the line of reflection.

Aug 6-7:55 AM

**Explain 4 Applying Reflections**

**Example 4**  
The figure shows one hole of a miniature golf course. It is not possible to hit the ball in a straight line from the tee T to the hole H. At what point should a player aim in order to make a hole in one?

Aug 6-8:00 AM

August 7, 2018

Eyeopener:  
Translate point (3,-7) using rule  $(x - 10, y + 5)$ .  
Where is the image?  
Write the vector for the mapping.

Aug 7-7:50 AM

**Study Guide!**

Unit 1 **Sc4** 1 - Translations & Reflections Name: \_\_\_\_\_

Describe the transformation.

- Given  $A = (5, 4)$ , describe the transformation if  $A' = (0, 0)$ .  $(x-5, y-4)$
- Given  $C = (3, -2)$ , describe the transformation if  $C' = (-12, 32)$ .  $(x+15, y+34)$
- Given  $A = (5, -5)$ , where would  $A'$  be if  $T(x-2, y+k)$  occurred?  $(3, -5)$
- Given  $A = (5, 4)$ , where would  $A'$  be if it was reflected over the line  $y = 0$ ?  $(5, -4)$
- Reflect across the line  $x = 0$ .  $(-5, 4)$
- Reflect about the line  $y = 0$ .  $(0, 4)$

Aug 6-11:30 AM

True or False: Circle the correct answer. 7-11

- True or False: Quadrilateral  $A'B'C'D'$  is the pre-image.  True
- True or False:  $SA \neq SA'$ .  True
- True or False: Quadrilateral  $ABCD$  is congruent to the quadrilateral  $A'B'C'D'$ .  True
- True or False: The transformation shown is not a reflection.  True
- True or False: Quadrilateral  $ABCD$  was transformed, to create quadrilateral  $A'B'C'D'$ .  True

X-axis  
Y=0 line

Aug 6-1:50 PM

12 Write a translation rule to describe the transformation.  
 $T(x, y) = (x+4, y-1)$

13. Given  $G = (4, 3)$  and  $G' = (-1, 3)$ , what is the line of reflection?  $y$ -axis

14. A figure is transformed by  $T(x+4, y-2)$  and then transformation by  $T(x+1, y-5)$ . How does the original pre-image related to the final image after both transformations?  
 $T''(x+5, y-5)$

Aug 6-1:51 PM

Rule  $(x+2, y+4)$

15. Point  $P(2, 3)$  has been translated to  $P'(4, 7)$ . Where will point  $Z(4, 7)$  be located after the same translation?  
a.  $Z'(8, 9)$   
b.  $Z'(6, 11)$   
c.  $Z'(8, 5)$   
d.  $Z'(11, 8)$

16. Graph the composition of transformations:  $T(x-2, y)$ ,  $R_{x-axis}$

5 Bonus Points: Factor and solve the following quadratic equation:  $x^2 - 3x - 4 = 0$

$(x+1)(x-4) = 0$   
 $x+1=0 \quad x-4=0$   
 $-1 \quad -1 \quad +4 \quad +4$   
 $x=-1 \quad x=4$

Aug 6-1:52 PM

Quiz

Bonus correction  
 $x^2 + 4x + 4 = 0$

Aug 7-7:52 AM

August 8, 2016

Eyopener: Highly missed problems from the quiz...try them today!

3. Given  $A = (3, -5)$ , where would  $A'$  be if  $T(3 + 2, y - 14)$  occurred?  $(5, -19)$  ✓

4. Given  $A = (5, 4)$ , where would  $A'$  be if it was reflected over the line  $x = 0$ ?  $(-5, 4)$

5. Reflect across the line  $y = 0$

6. Reflect about the line  $x = 0$

Get your SG out!

Aug 7-2:56 PM

p 78 copy into your notebooks the first 4 lines of text

Let's investigate some Geometry rotations around the 'origin.'

Geogebra, rotations

Aug 7-10:05 AM

Let's rotate 2 figures.

$R_{270^\circ}$  around the origin

$A(3, 1)$   
 $B(6, 2)$   
 $Y(3, 4)$   
 $Z(6, 5)$

Meas A to +ho origin  
 Rotate  $270^\circ$   
 Measure A to origin  
 Measure B to origin

Aug 7-10:05 AM

August 9, 2018

What is the easiest transformation for you (translation, reflection or rotation)?  
 Please explain why this is the easiest transformation for you.  
 Sketch a figure (square, rectangle, triangle, etc) displaying this type of transformation.

Aug 7-10:05 AM

P 80 Rules for Rotation

The table summarizes rules for rotations on a coordinate plane.

Rules for Rotations Around the Origin on a Coordinate Plane	
90° rotation counterclockwise	$(x, y) \rightarrow (-y, x)$
180° rotation	$(x, y) \rightarrow (-x, -y)$
270° rotation counterclockwise	$(x, y) \rightarrow (y, -x)$
360° rotation	$(x, y) \rightarrow (x, y)$

Aug 7-10:05 AM

**Composition**  
 $R_{90} \circ R_y$  - axis  
 Rotation Reflection

90° rotation counterclockwise	$(x, y) \rightarrow (-y, x)$
180° rotation	$(x, y) \rightarrow (-x, -y)$
270° rotation counterclockwise	$(x, y) \rightarrow (y, -x)$
360° rotation	$(x, y) \rightarrow (x, y)$

Preimage Rotation  
 $X(2,1) \rightarrow X'(-1,2)$   
 $Y(4,1) \rightarrow Y'(-1,4)$   
 $Z(5,4) \rightarrow Z'(-4,5)$

Reflection  $(x,y) \rightarrow (-x,y)$   
 $X''(-1,2) = (1,2)$   
 $Y''(-1,4) = (1,4)$   
 $Z''(-4,5) = (4,5)$

Aug 9-7:55 AM

**Protractor vs Rules...which one will you choose?**

Kuta Software - Infinite Pre-Algebra  
 Rotations of Shapes  
 Graph the image of the figure using the transformation given.

1) rotation 180° about the origin  
 2) rotation 90° counterclockwise about the origin  
 3) rotation 90° clockwise about the origin  
 4) rotation 180° about the origin

Handwritten notes:  $(-5, 2)$ ,  $(0, 1)$ ,  $(-3, 5)$ ,  $F(-3, -1)$ ,  $B(-1, 5)$ ,  $M(2, -4)$ ,  $H(2, -1)$ ,  $GT(KH)$ ,  $ST$

Aug 7-3:14 PM

**P** **JP LB**

5) rotation 90° clockwise about the origin  
 $U(1, -2), W(0, 2), A(3, 2), G(3, -3)$

6) rotation 180° about the origin  
 $V(2, 0), S(1, 3), G(5, 0)$

**Find the coordinates of the vertices of each figure after the given transformation.**

7) rotation 180° about the origin  
 $Z(-1, -5), A(-1, 0), C(1, 1), M(3, -2)$

8) rotation 180° about the origin  
 $L(1, 3), Z(5, 5), F(4, 2)$

9) rotation 90° clockwise about the origin  
 $S(1, -4), W(1, 0), A(3, -4)$

10) rotation 180° about the origin  
 $V(-5, -3), A(-3, 1), G(0, -3)$

Aug 7-3:14 PM

Write a rule to describe each transformation.

11)

12)

13)

14)

Aug 7-3:15 PM

Study Guide U1 SG2

**SKIPPING 10-13**  
**18) X 3**

Unit 1 - 2 - Translations, Reflectors & Rotations  
 Write the counter clockwise rule for each type of rotation:

1. 0°  $(x, y) \rightarrow (x, y)$   
 2. 90°  $(x, y) \rightarrow (-y, x)$   
 3. 180°  $(x, y) \rightarrow (-x, -y)$   
 4. 270°  $(x, y) \rightarrow (y, -x)$

5. Rotate the line  $90^\circ$  counter clockwise.  
 Preimage  $(x, y) \rightarrow (-y, x)$   
 $(4, -2) \rightarrow (2, 4)$   
 $(8, -6) \rightarrow (6, 8)$   
 $(4, -8) \rightarrow (8, 4)$

6. Rotate the line  $90^\circ$  clockwise.

7. Using the  $(-2, y + 5)$ , find the pre-image of  $A(-3, 5)$

Aug 9-11:29 AM

Write a rule using proper notation that describes how the following figures have been transformed.

8. Rule:

9. Rule:

Questions 10-13: Determine if each function is even, odd, or neither.


10.  $f(x) = -9x^4 + 3$   
 11.  $f(x) = x^4 + 2x^7$   
 12.

13.





Aug 9-11:34 AM

14. What geometric figure has an infinite number of lines of symmetry?

15. How many lines of symmetry does a square have? \_\_\_\_\_




18. Which shape below has 2 lines of symmetry?

- 
- 
- 
- 

19. An isometry is a transformation in which the pre-image and image are \_\_\_\_\_

20. What is the smallest degree of rotation to map the image onto itself?

- 360°
- 180°
- 45°
- 90°



Aug 9-11:34 AM

Odd, even or neither functions

Andy Wain, describe an even, odd, and neither function

mathbyfives, even, odd, neither symmetry by looking @

...be ready to share what you have learned.

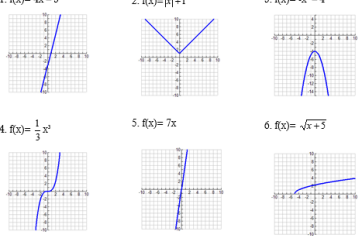
Aug 7-10:05 AM

Even, Odd, or Neither Worksheet

Name: \_\_\_\_\_

Determine whether the following functions are even, odd, or neither.

- $f(x) = 4x - 3$
- $f(x) = |x| + 1$
- $f(x) = -x^2 - 4$
- $f(x) = \frac{1}{3}x^2$
- $f(x) = 7x$
- $f(x) = \sqrt{x+5}$



Aug 7-3:07 PM

- $f(x) = 3x^2$
- $f(x) = x^2 - 2$
- $f(x) = 3x + 4$
- $f(x) = x^2 - 5$
- $f(x) = 10x + 5$
- $f(x) = 2(x+1)^2$

Aug 7-3:08 PM