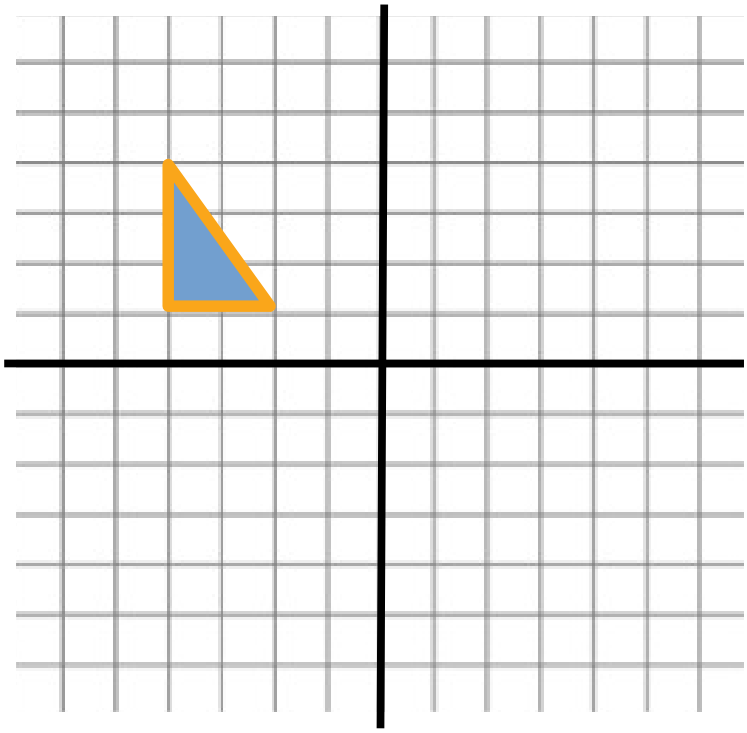
Reflections Worksheet

Step 1: *Label each point (**A** , **B** , **C**) on the triangle below*

A (-4 , 2) **B** (-2 , 2) **C** (-4 , 5)



Step 2: *Draw our triangle reflected across the x-axis, and label each point (D, E, F)*

D (_____ , _____)

E (_____ , _____)

F (_____ , _____)

Step 3: *Draw our original triangle reflected across the y-axis, and label each point (G, H, I)*

G (_____ , _____)

H (_____ , _____)

I (_____ , _____)

Although all corners labeled above have different x and y coordinates, all 3 triangles are congruent. Keeping in mind that these triangles are congruent, find the matching points for each of our original triangles corners.

point from original triangle	matching point after reflection on x	matching point after reflection on y
A (-4 , 2)		
B (-2 , -2)		
C (-4 , 5)		

Hint: start with the corner on the right angle first, they are the easiest to match

Think about what changes occurred after the reflections.

Are the changes the same for the reflection across the x-axis and the y-axis?

What stayed the same during the reflection?

Word Problem: reflection-x

***Directions**: Write a function called reflection-x, which takes in an x and y coordinate and returns the y coordinate after reflecting across the x-axis.*

Contract+Purpose Statement

Every contract has three parts:

__reflection-x_____:: _____ -> _____
function name *domain* *range*

_____
what does the function do?

Give Examples

Write some examples, then circle and label what changes

examples:

_____ (_____) is (_____)
function name *input(s)* *what the function produces*

_____ (_____) is (_____)
function name *input(s)* *what the function produces*

end

Definition

Write the definition, giving variable names to all your input values.

fun _____ (_____):
function name variables

_____

end

Word Problem: reflection-y

***Directions**: Write a function called reflection-y, which takes in an x and y coordinate and returns the x coordinate after reflecting across the y-axis.*

Contract+Purpose Statement

Every contract has three parts:

\# reflection-y :: _____ -> _____
function name *domain* *range*

\# _____
what does the function do?

Give Examples

Write some examples, then circle and label what changes

examples:

_____ (_____) is (_____)
function name *input(s)* *what the function produces*
_____ (_____) is (_____)
function name *input(s)* *what the function produces*

end

Definition

Write the definition, giving variable names to all your input values.

fun _____ (_____):
function name variables

_____

end

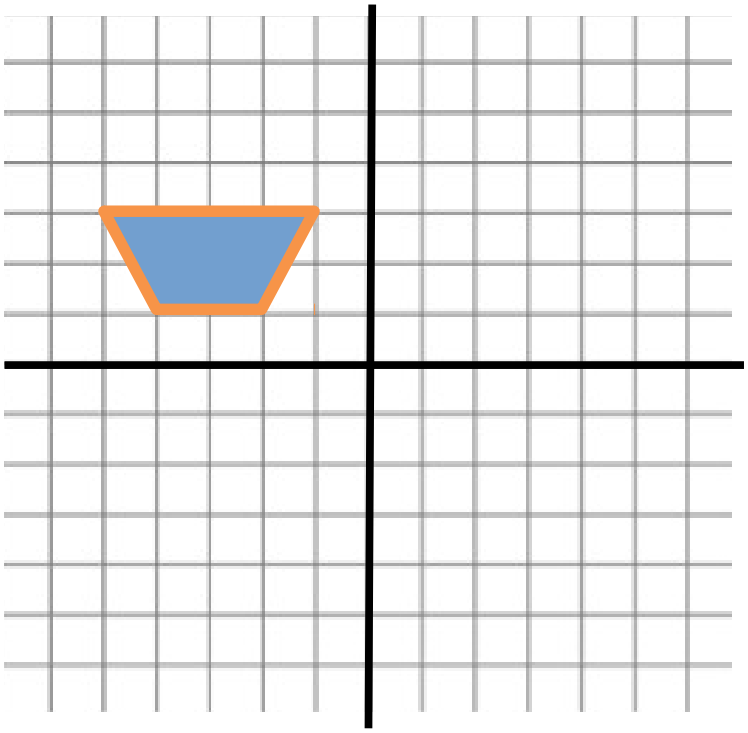
Transformation Worksheet

Rule #1 (x, y) ⟼ (x + 3 , y +4)

Rule #2 (x, y) ⟼ (x + 5 , y – 7)

Step 1: *Label each point (**A** , **B** , **C** , **D**) on the trapezoid below*

A (-5 , 3) **B** (-4 , 1) **C** (-2 , 1) **D** (-1 , 3)



Step 2: *Draw our trapezoid after we apply* **Rule #1**, *and label each point (E, F, G, H)*

E (_____ , _____)

F (_____ , _____)

G (_____ , _____)

H (_____ , _____)

Step 3: *Draw our trapezoid after we apply* **Rule #2**, *and label each point (I, J, K, L)*

I (_____ , _____)

J (_____ , _____)

K (_____ , _____)

L (_____ , _____)

Keeping in mind these trapezoids are congruent, find the matching points for each of our original trapezoids corners.

point from original trapezoid	matching point after **Rule #1**	matching point after **Rule #2**
A (-5 , 3)		
B (-4 , 1)		
C (-2 , 1)		
D (-1 , 3)		

Think about what changes occurred after the rules are applied.

Word Problem: translation-x

***Directions**: Write a function called translation-x, which takes in the translation to perform on x, and an x and y coordinate, and returns the x coordinate after performing only the translation relating to the x coordinate.*

Contract+Purpose Statement

Every contract has three parts:

translation-x :: _____ -> _____
function name *domain* *range*

_____
what does the function do?

Give Examples

Write some examples, then circle and label what changes

examples:

_____ (_____) is (_____)
function name *input(s)* *what the function produces*

_____ (_____) is (_____)
function name *input(s)* *what the function produces*

end

Definition

Write the definition, giving variable names to all your input values.

fun _____ (_____):
function name variables

_____

end

Word Problem: translation-y

***Directions**: Write a function called translation-y, which takes in the translation to perform on y, and an x,and y coordinate, and returns the y coordinate after performing only the translation relating to the y coordinate.*

Contract+Purpose Statement

Every contract has three parts:

translation-y :: _____ -> _____
function name *domain* *range*

_____
what does the function do?

Give Examples

Write some examples, then circle and label what changes

examples:

_____ (_____) is (_____)
function name *input(s)* *what the function produces*

_____ (_____) is (_____)
function name *input(s)* *what the function produces*

end

Definition

Write the definition, giving variable names to all your input values.

fun _____ (_____):
function name variables

_____

end