1 – 4 Find the line of reflection and highlight it with a colored pencil. Write the equation of the line of reflection. Find the coordinates of the reflected image and use them to write the image formula that would reflect any point (x,y) over the given reflection line.
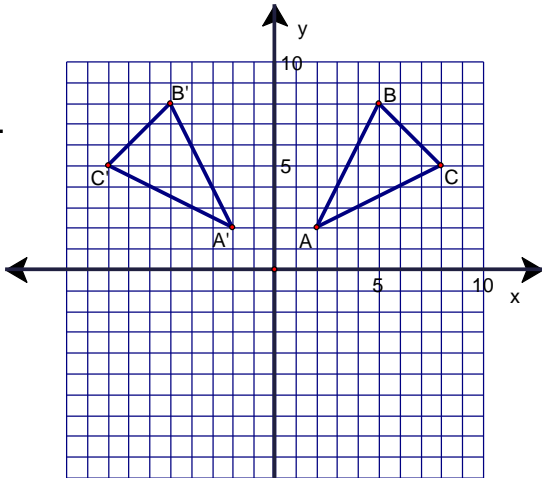
1.

A	(2,2)	B	(5,8)	C	(8,5)
A'		B'		C'	

Equation of the line of reflection

_____
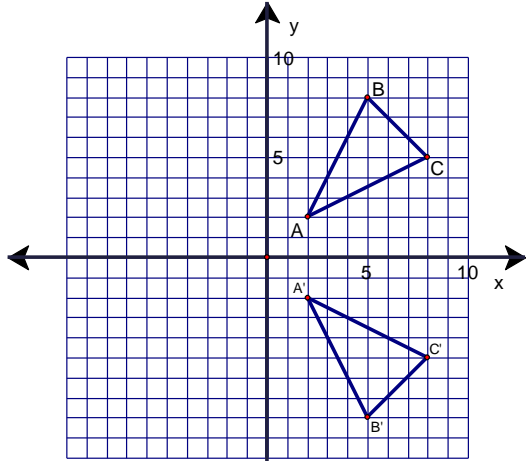
Image formula for this reflection

_____

2.

A	(2,2)	B	(5,8)	C	(8,5)
A'		B'		C'	

Equation of the line of reflection

_____

Image formula for this reflection

_____

3.
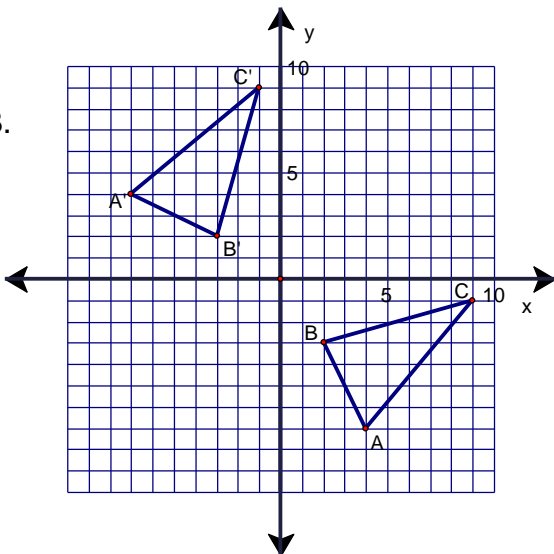
A	(4,-7)	B	(2,-3)	C	(9,-1)
A'		B'		C'	

Equation of the line of reflection

_____

Image formula for this reflection

_____

4.

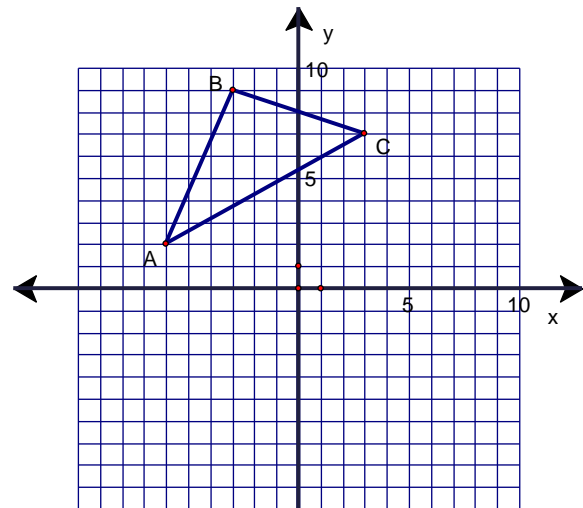| A	(2,2)	B	(5,8)	C	(8,5)
A'		B'		C'	

Equation of the line of reflection

_____
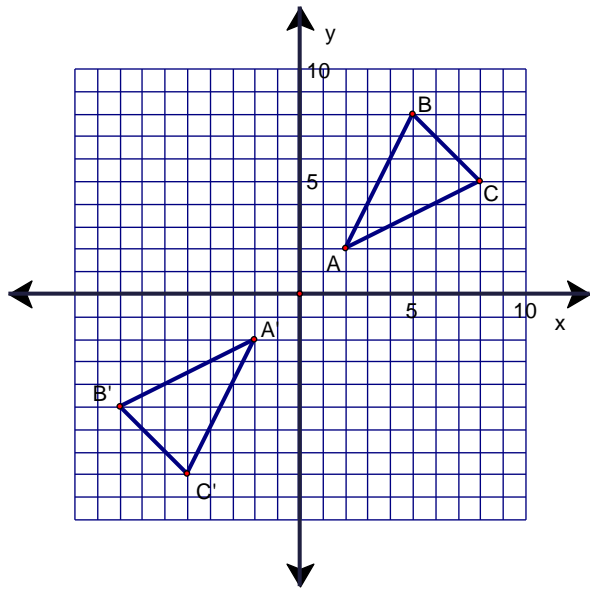
Image formula for this reflection

_____

5 – 6 Use the image formulas written in numbers 1 – 4 to find the new coordinates of △ABC. Then graph the new triangle (△A'B'C').

5. Equation of the line of reflection: y = x
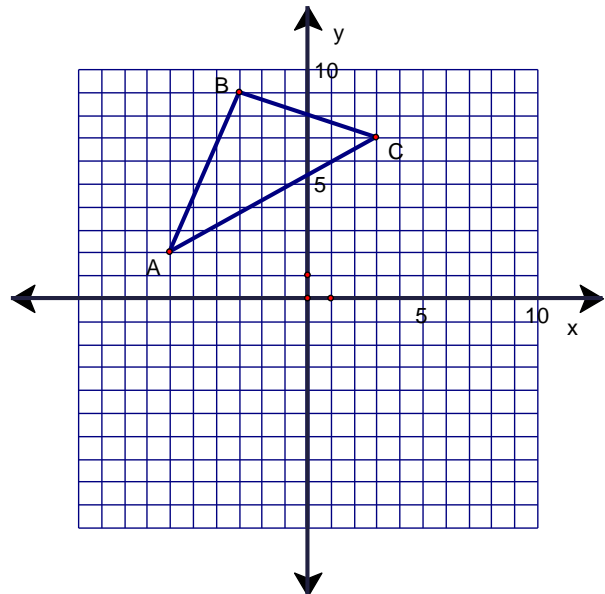
Image formula for this reflection: _____

A	(-6,2)	B	(-3,9)	C	(3,7)
A'		B'		C'	

6. Equation of the line of reflection: y = -x

Image formula for this reflection: _____

A	(-6,2)	B	(-3,9)	C	(3,7)
A'		B'		C'	

7 – 8 Use the image formulas written in numbers 1 – 4 to first find the coordinates of △A'B'C' and then to find the coordinates of △A"B"C" for the given composites. Then graph ONLY △A"B"C". Also graph the two lines of reflection.

7. Composite: Reflect △ABC over y = 0 first and then reflect again over y = x.

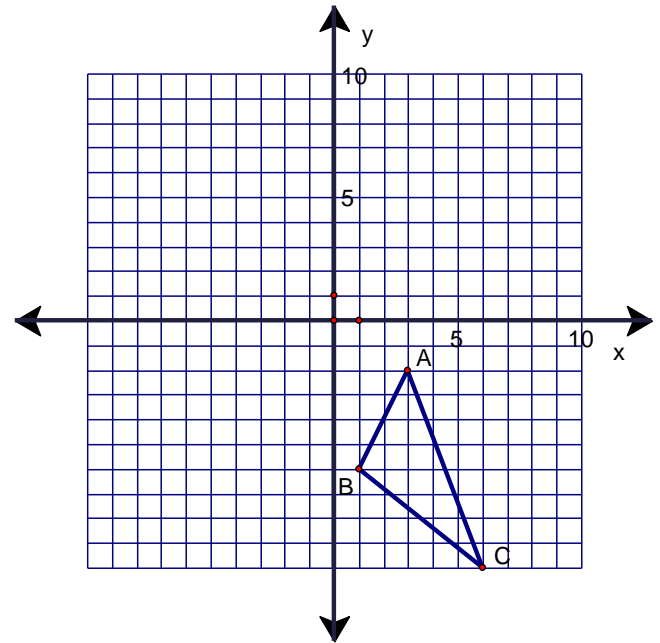Equation of the *first* line of reflection: y = 0

Image formula for this reflection: _____

Equation of the *second* line of reflection: y = x

Image formula for this reflection: _____

A	(3,-2)	B	(1,-6)	C	(6,-10)
A'		B'		C'	
A"		B"		C"	

What transformation occurred from this composite?
In other words, what transformation would transform
△ABC to △A"B"C" without using any reflections?

8 Composite: Reflect △ABC over y = x first and then reflect again over y = 0.
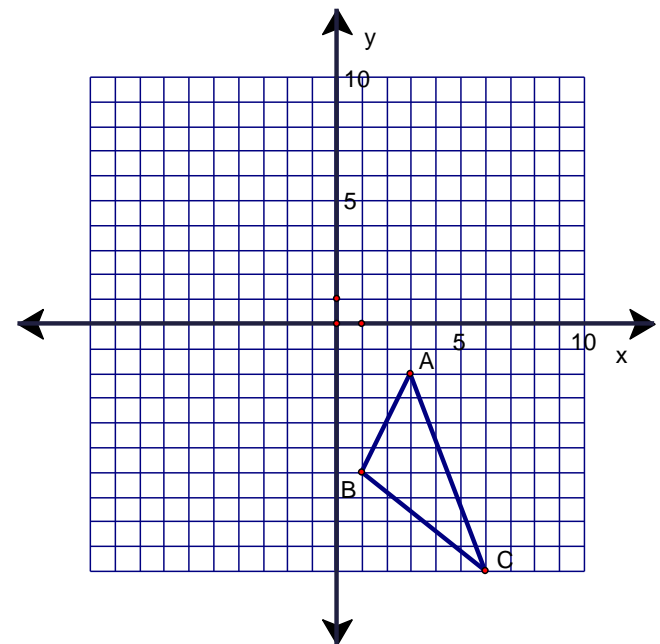
Equation of the first line of reflection: y = x

Image formula for this reflection: _____

Equation of the second line of reflection: y = 0

Image formula for this reflection: _____

A	(3,-2)	B	(1,-6)	C	(6,-10)
A'		B'		C'	
A"		B"		C"	

What transformation occurred from this composite?
In other words, what transformation would transform
△ABC to △A"B"C" without using any reflections?

9. Notice in numbers 7 and 8, the same two line of reflection were used, however the image triangle is located in a different position. Make a conjecture on what you think makes the difference.

10 - 11. Use the image formulas written in numbers 1 – 4 to first find the coordinates of
△A'B'C' and then to find the coordinates of △A"B"C" for the given composites. Then graph
ONLY △A"B"C".

10. Composite: Reflect △ABC over y = -x first and then
reflect again over y = x.

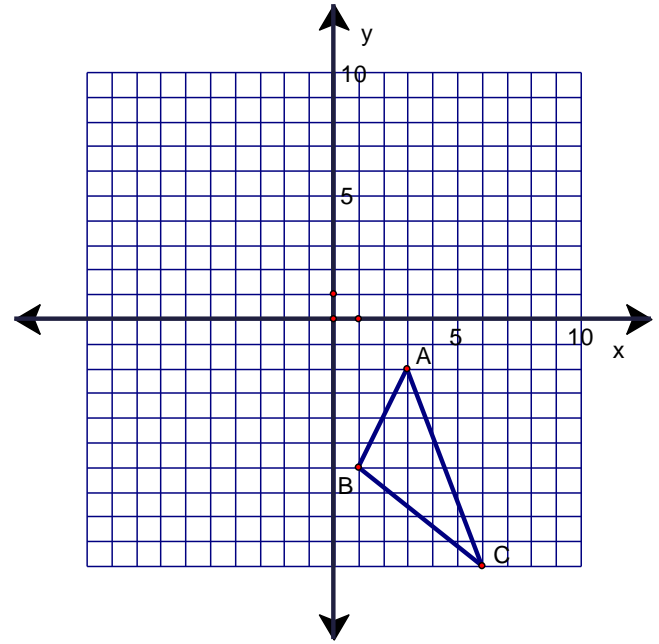Equation of the first line of reflection: _____

Image formula for this reflection: _____

Equation of the second line of reflection: _____

Image formula for this reflection: _____

A	(3,-2)	B	(1,-6)	C	(6,-10)
A'		B'		C'	
A"		B"		C"	

What transformation occurred from this composite?
In other words, what transformation would transform
△ABC to △A"B"C" without using any reflections?

11. Composite: Reflect △ABC over y = x first and then
reflect again over y = -x.

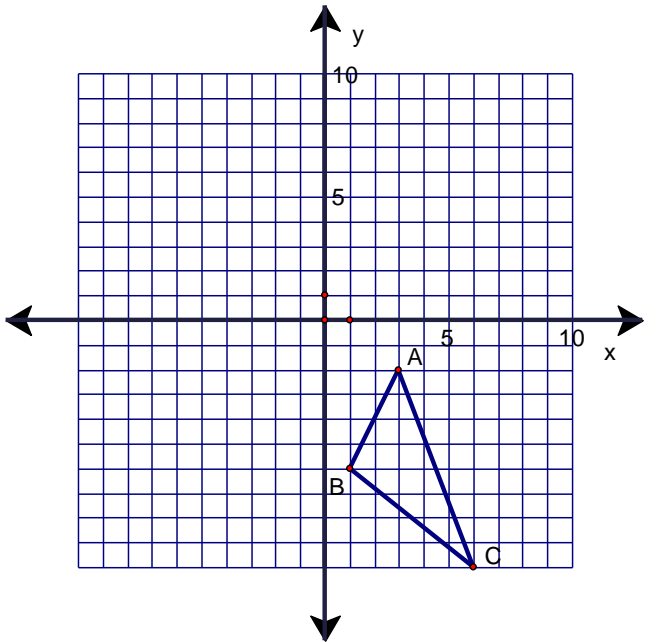Equation of the first line of reflection: _____

Image formula for this reflection: _____

Equation of the second line of reflection: _____

Image formula for this reflection: _____

A	(3,-2)	B	(1,-6)	C	(6,-10)
A'		B'		C'	
A"		B"		C"	

What transformation occurred from this composite?
In other words, what transformation would transform
△ABC to △A"B"C" without using any reflections?

Give an image formula for this transformation.

12. Notice in numbers 10 and 11, the same transformation occurred but different lines were used.
Make a conjecture on what you think must be true about the lines used as lines of reflection.