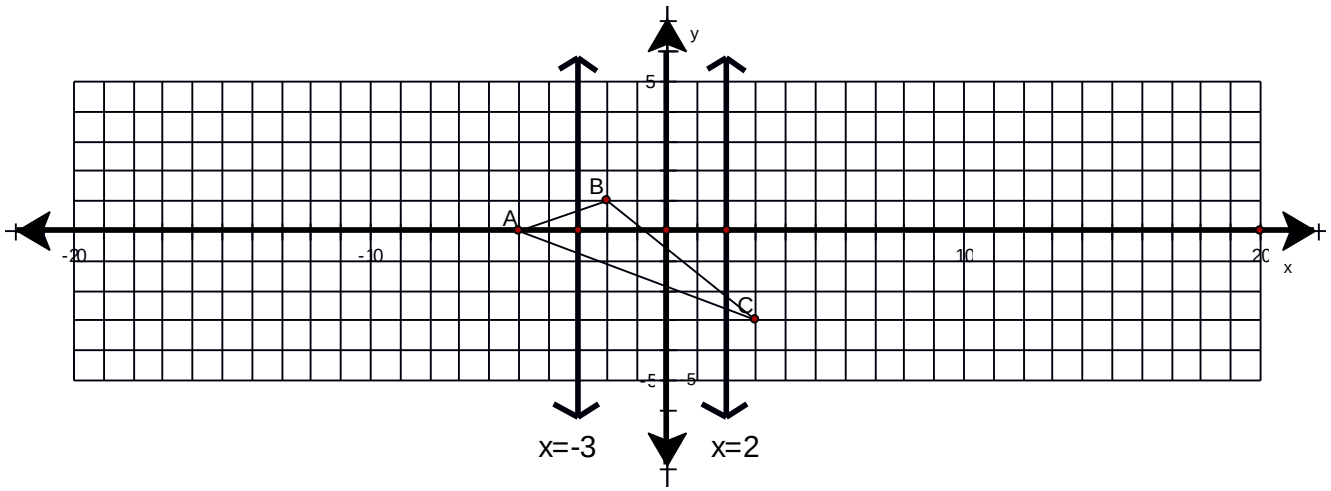
Geometry Unit 1 Transformations Name:_____

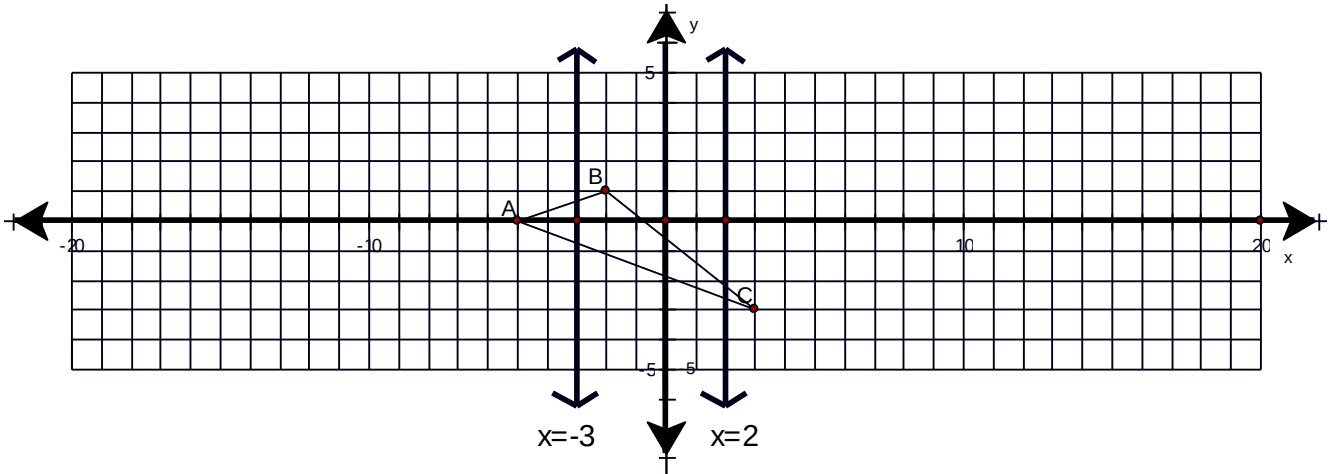
Day 9 Composite of Reflections over Two Parallel Lines Date:_____Hour____

*Lesson Adapted from Macomb Mathematics Science Technology Center

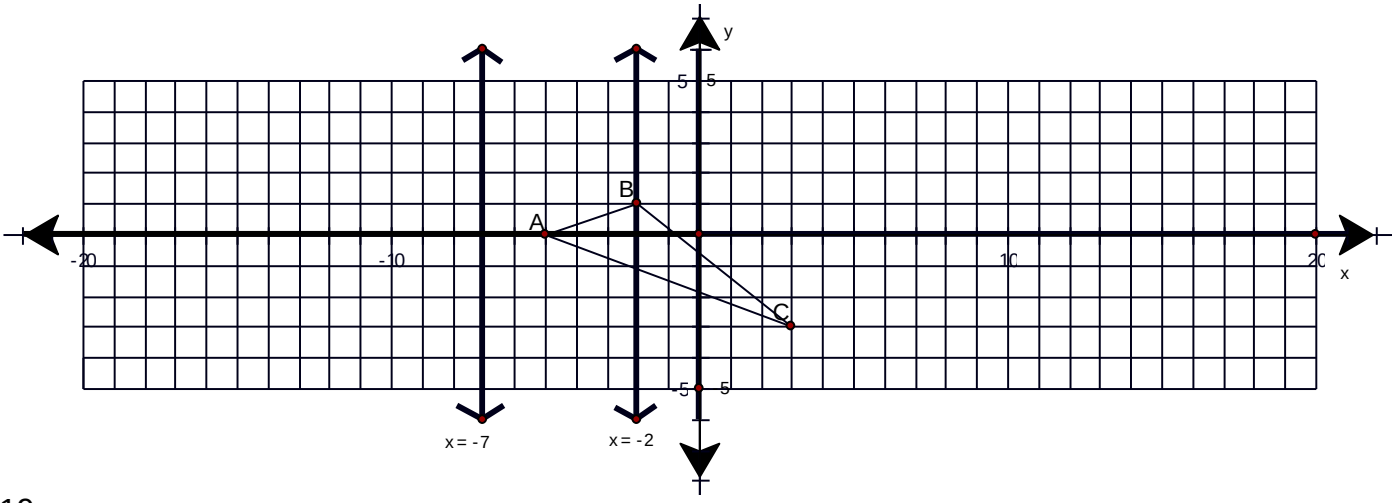
1. Using a colored pencil, reflect ΔABC over the x = -3 line and label the points A', B', and C' respectively. Draw ΔA'B'C'.
2. Using a black pencil, reflect ΔA'B'C' over the x = 2 line and label the points A", B", and C" respectively. Draw Δ A"B"C".
3. Draw arrows from A to A", from B to B", from C to C" using a different color.
4. What transformation occurred that would map ΔABC onto Δ A"B"C"?_____
5. How far did ΔABC move to become Δ A"B"C"?_____in what direction?_____
6. Write a composite for this situation that maps the first triangle to the last triangle.



7. Using a colored pencil, reflect ΔABC over the x = 2 line and label the points A', B', and C' respectively. Draw ΔA'B'C'.
8. Using a black pencil, reflect ΔA'B'C' over the x = -3 line and label the points A", B", and C" respectively. Draw ΔA"B"C".
9. Draw arrows from A to A", from B to B", from C to C" using a different color.
10. What transformation occurred from ΔABC to become ΔA"B"C"?_____
11. How far did ΔABC move to become Δ A"B"C"?_____in what direction?_____
12. Write a composite for this situation that maps the first triangle to the last triangle.



13. Using a colored pencil, reflect Δ ABC over the x = -7 line and label the points A', B', and C' respectively. Draw Δ A'B'C'.
14. Using a black pencil, reflect Δ A'B'C' over the x = -2 line and label the points A", B", and C" respectively. Draw Δ A"B"C".
15. Draw arrows from A to A", from B to B", from C to C" using a different color.
16. What transformation occurred from Δ ABC to become Δ A"B"C"?_____
17. How far did ΔABC move to become Δ A"B"C"?_____in what direction?_____
18. Write a composite for this situation that maps the first triangle to the last triangle.



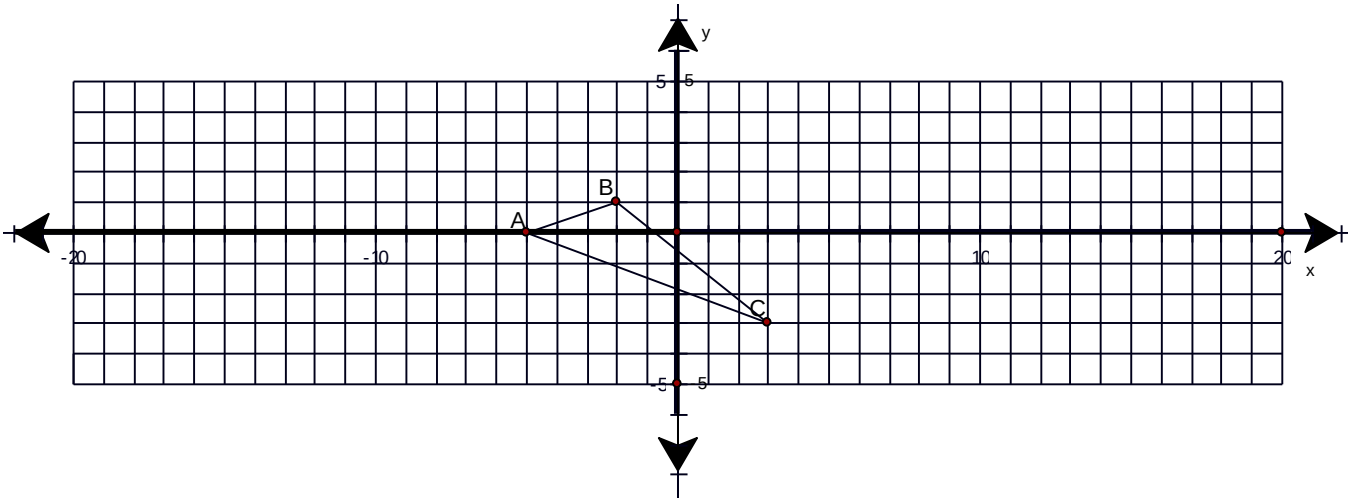
19.

Conjecture on any relationship there might be between the distance between the lines and the distance the original triangle moves in relationship to the ending triangle.

_____

_____

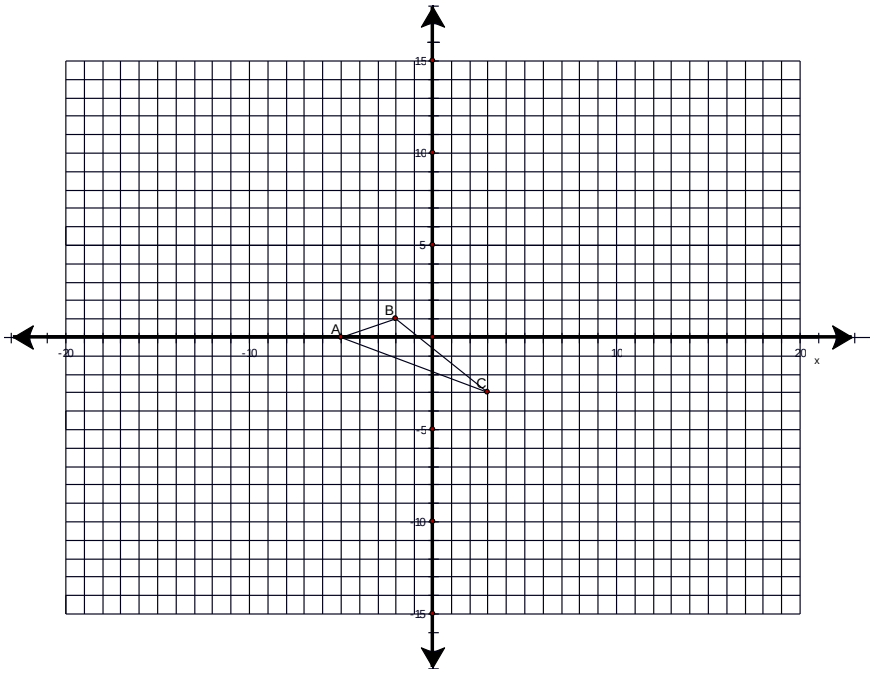
20. Graph the line x = 4. Find a second line of reflection so that the composite of the two reflections will translate Δ ABC 10 units to the right. Write the composite.



21. Graph the lines y = 3 and y = -2.
22. Using a colored pencil, reflect Δ ABC over the y = 3 line and label the points A', B', and C 'respectively. Draw Δ A'B'C'.
23. Using a black pencil, reflect Δ A'B'C' over the y = -2 line and label the points A", B", and C" respectively. Draw Δ A"B"C".
24. Draw arrows from A to A", from B to B",from C to C" using a different color.
25. What transformation occurred from

    ΔABC to become

    ΔA"B"C"?_____

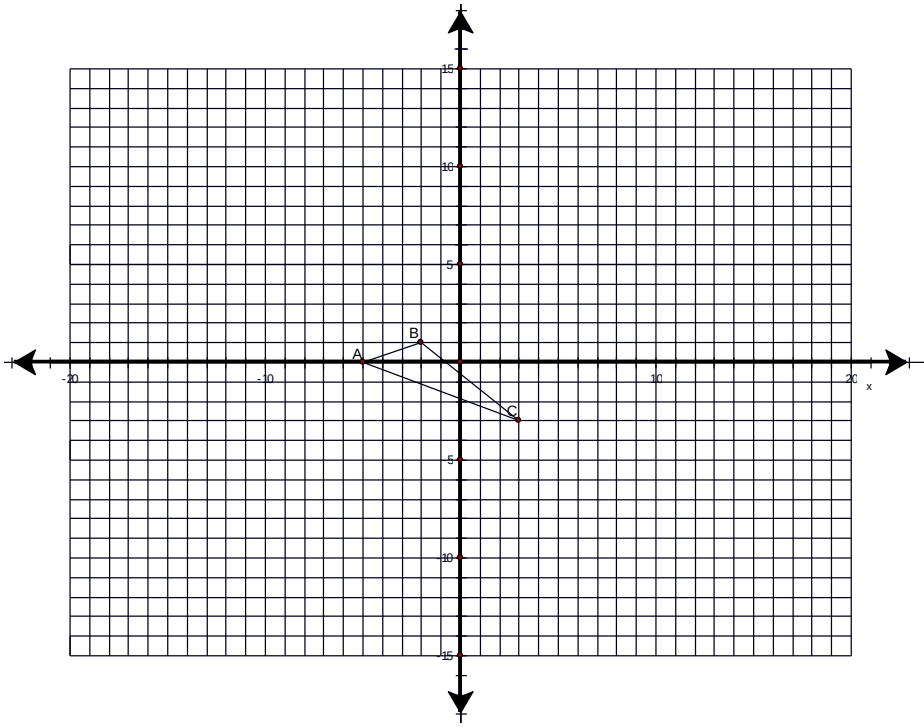


26. How far did ΔABC move to become Δ A"B"C"?_____in what direction?_____
27. Write a composite for this situation that maps the first triangle to the last triangle.

28. Graph the lines y = 3 and y = -2.
29. Using a colored pencil, reflect ΔABC over the y = -2 line and label the points A', B', and C' respectively. Draw Δ A'B'C'.
30. Using a black pencil, reflect ΔA'B'C' over the y = 3 line and label the points A"B"C" respectively. Draw Δ A"B"C".
31. Draw arrows from A to A", from B to B", from C to C" using a different color.
32. What transformation occurred from

    Δ ABC to become Δ

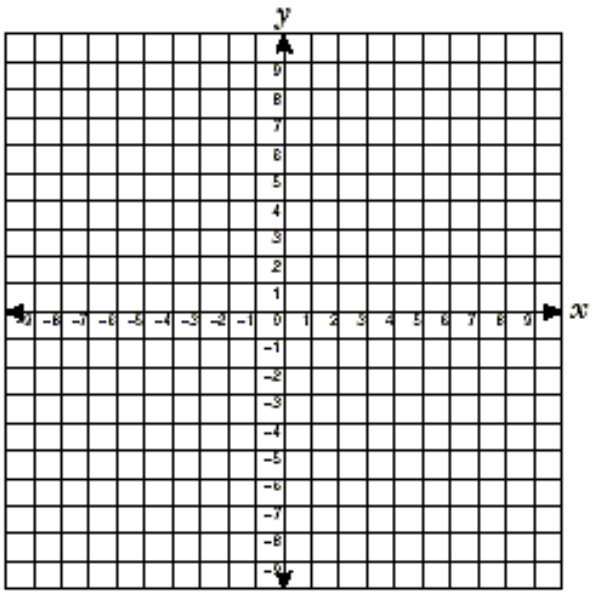
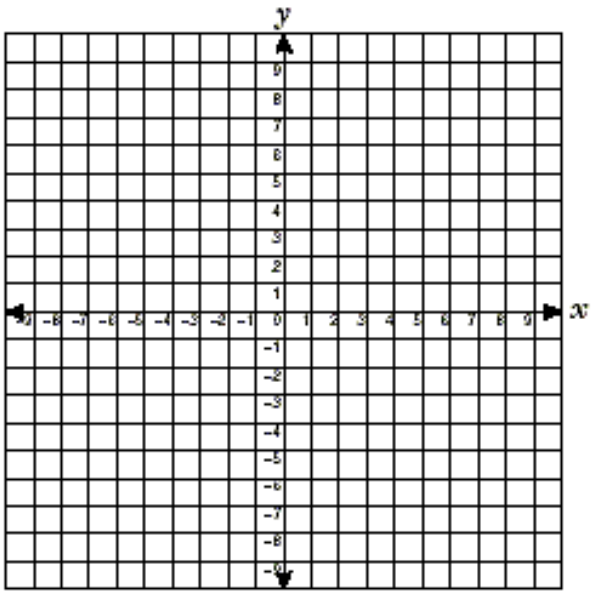
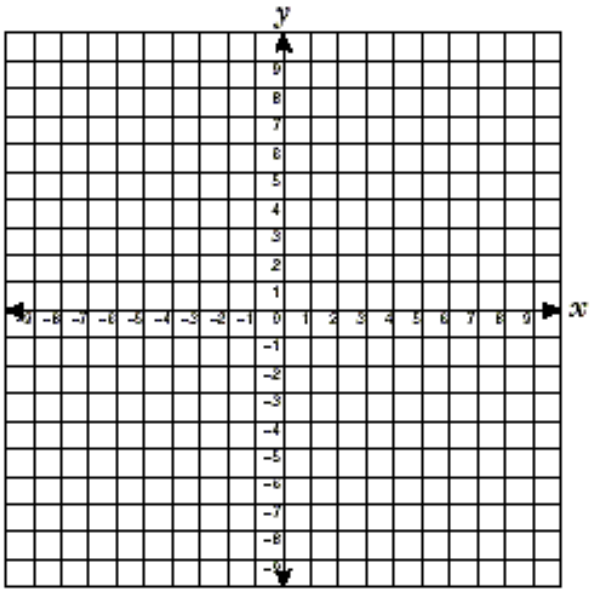
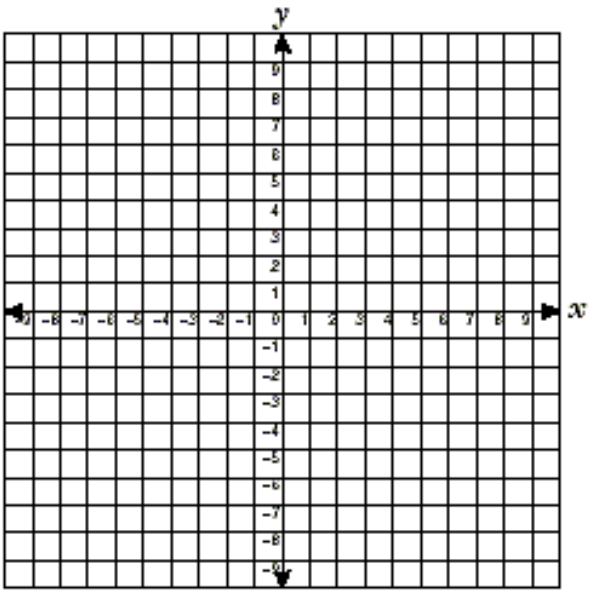
    A"B"C"?_____



33. How far did ΔABC move to become Δ A"B"C"_____ in what direction?_____
34. Write a composite for this situation that maps the first triangle to the last triangle.

35. What conjectures can you make about the composite of two reflections over two parallel lines?

Day 9 Homework: Pages 657 to 658

Part 1 # 1 – 7 all

Part 2 # 11 – 17 odd (Use graph paper below)