1) Translate ΔQRS if Q(4, 1), R(1, -2), S(2, 3) by the rule $T_{\langle -3,-4\rangle}$
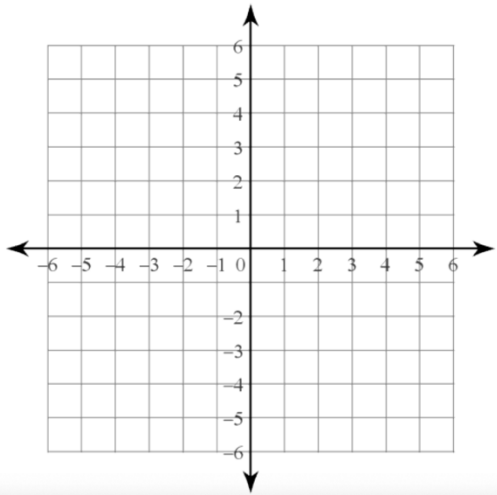
Q' (____,____)
R' (____,____)
S' (____,____)

2) Use $\Delta Q'R'S'$ from problem 1 to R_{x-axis}

Q''(____,____)
R''(____,____)
S''(____,____)
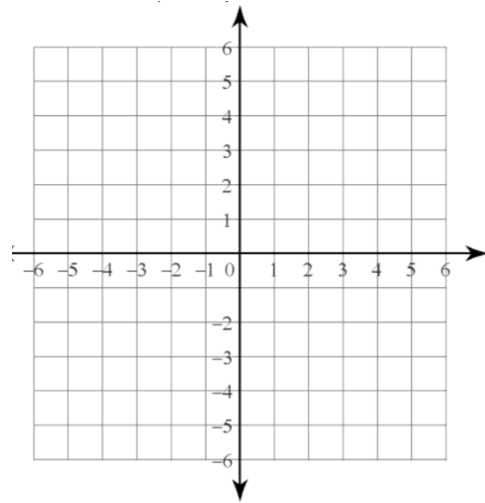
3) Rotate ΔCAR if C(-1, 4), A(2, 3), R(-3, -2) using the rule $r_{(180°,O)}$
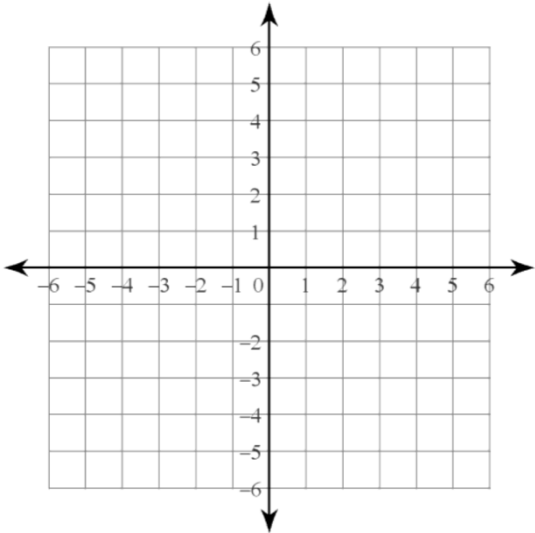
C'(____,____)
A'(____,____)
R'(____,____)

4) Reflect $\Delta C'A'R'$ using the rule $R_{y=x}$

C''(____,____)
A''(____,____)
R''(____,____)
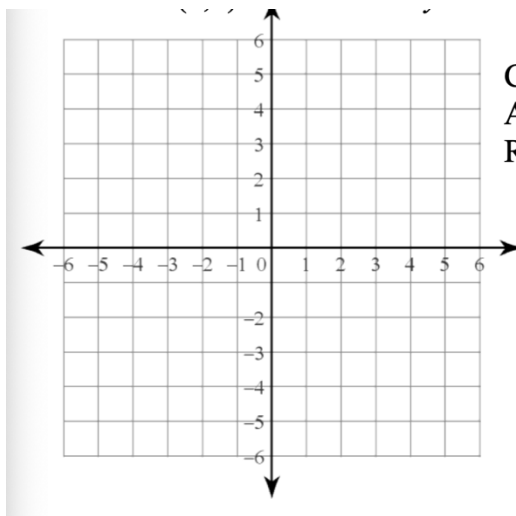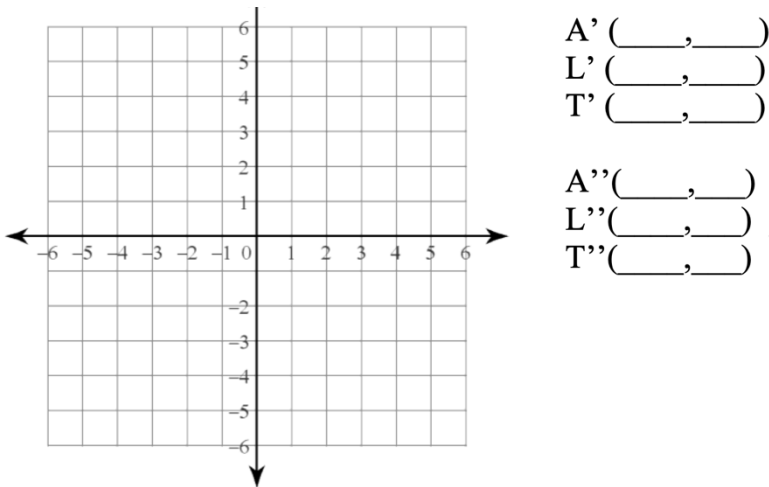
5) Given ΔTAB where T(2, 3), A(1, 1), B(4, -3) using the following transformation $(R_{x-axis} \circ r_{(270°,O)})$

T'(___,___)
A'(___,___)
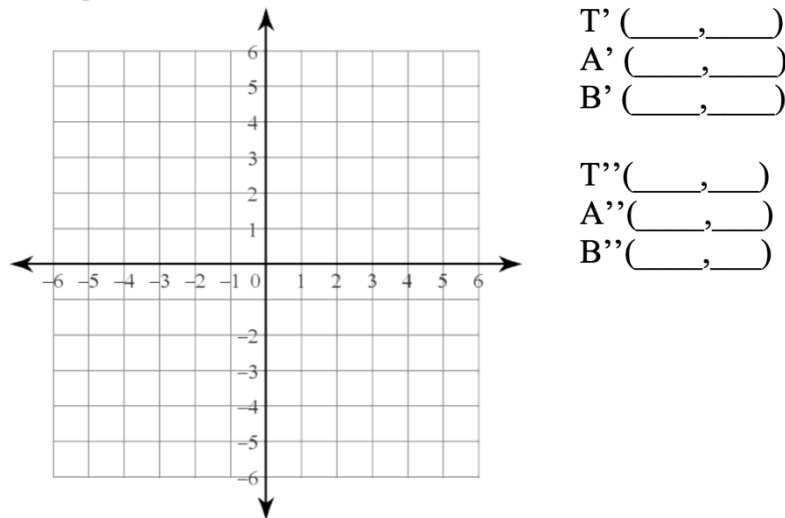B'(___,___)

T''(___,___)
A''(___,___)
B''(___,___)
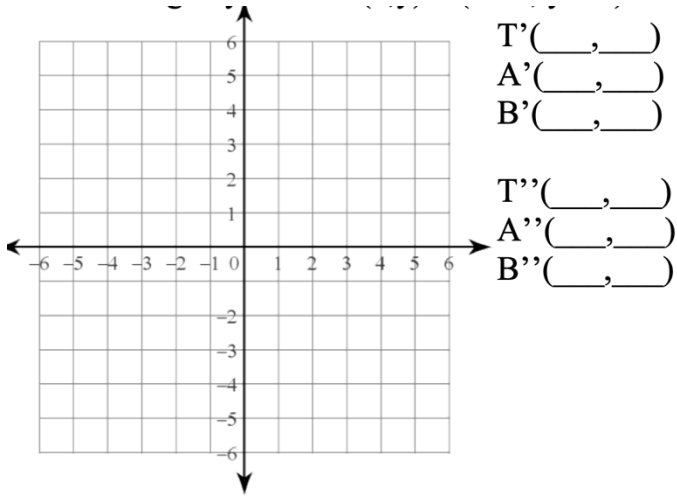
6. Given ΔTAB where T(2, 3), A(1, 1), B(4, -3) using the following Transformation $(T_{\langle-2,-1\rangle} \circ R_{y=2})$

T'(___,___)
A'(___,___)
B'(___,___)

T''(___,___)
A''(___,___)
B''(___,___)
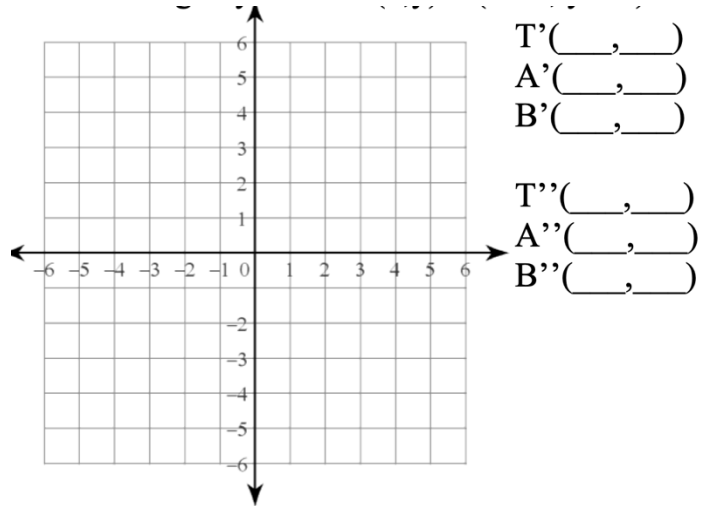
7) Given ΔALT where A(-5, -1), L(-3, -2) T(-3, 2) using the following transformation $(R_{y=-x} \circ r_{(90°,O)})$

A'(___,___)
L'(___,___)
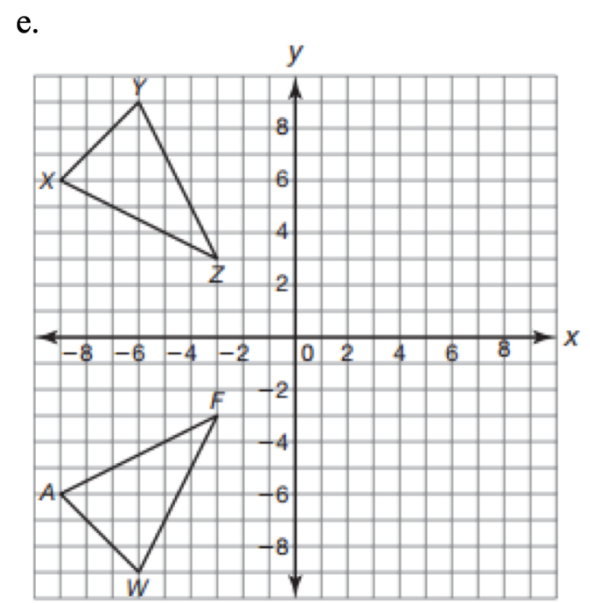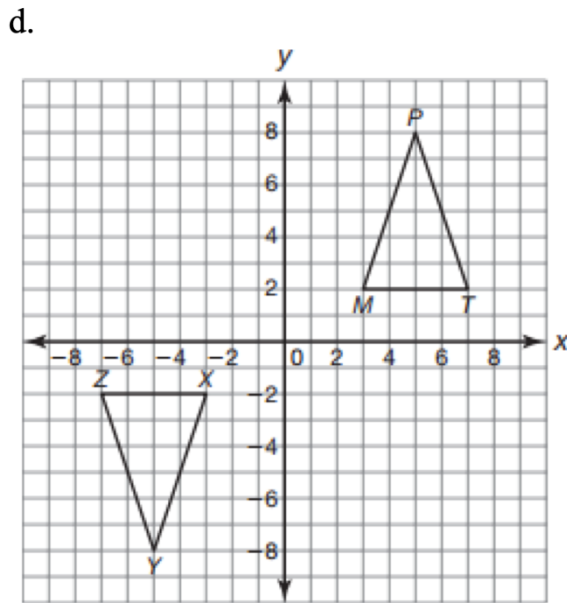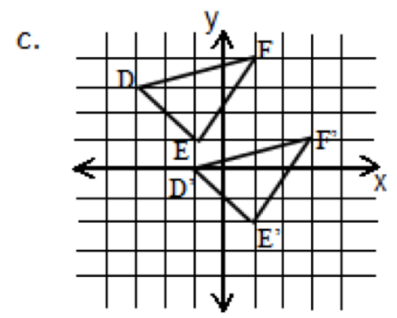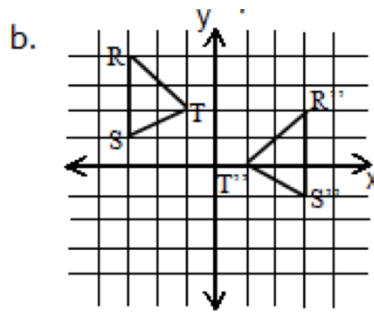T'(___,___)

A''(___,___)
L''(___,___)
T''(___,___)

8) Given ΔTAB where T(2,3), A(1, 1), B(2, 0) using the following translation $(R_{y=1} \circ R_{y=-1})$

T'(___,___)
A'(___,___)
B'(___,___)

T''(___,___)
A''(___,___)
B''(___,___)

Write a single translation rule for the transformation from problem 8.

9) Identify the transformation(s) and if possible write the rule for the transformation

a.

b.

c.

d.

e.
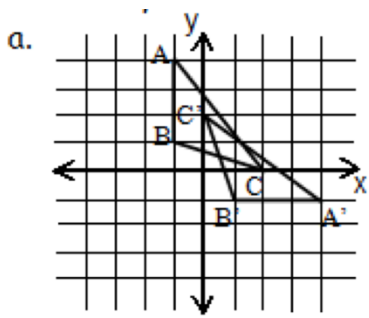
Write each composition of translations as one translation.

10. $T_{\langle -3,3 \rangle} \circ T_{\langle -2,4 \rangle}$

11. $T_{\langle -4,-3 \rangle} \circ T_{\langle 3,1 \rangle}$

12. $T_{\langle 5,-6 \rangle} \circ T_{\langle -7,5 \rangle}$

13. $T_{\langle 8,-2 \rangle} \circ T_{\langle -4,9 \rangle}$