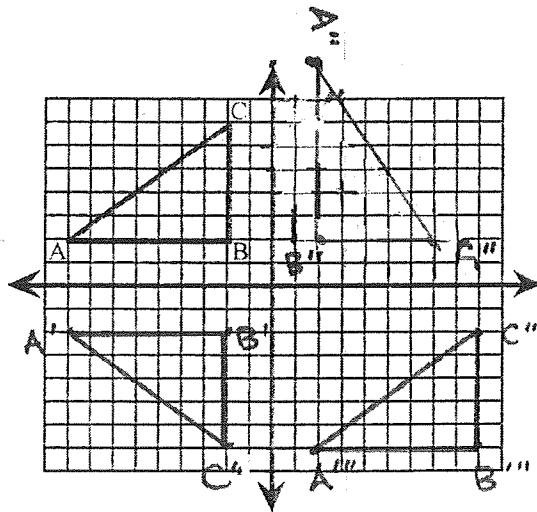1.   The points A(−9, 2), B(−2, 2) and C(−2, 7)
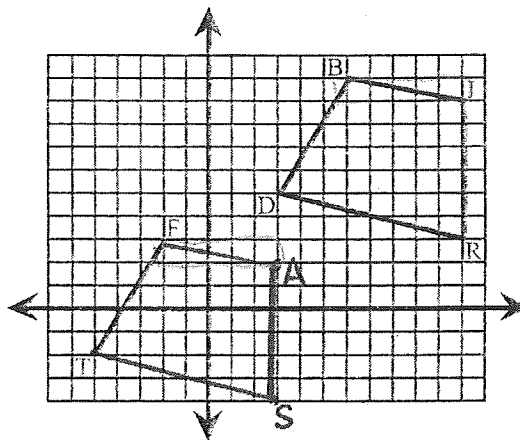   are plotted and connected to form △ABC.

      a) Reflect (flip) △ABC across the x-axis.

      b) Rotate (turn) △ABC 90° clockwise
          about the origin, that is, into the first
          quadrant.

      c) Translate (slide) △ABC into the fourth
          quadrant so that vertex A has
          coordinates (2, −7).

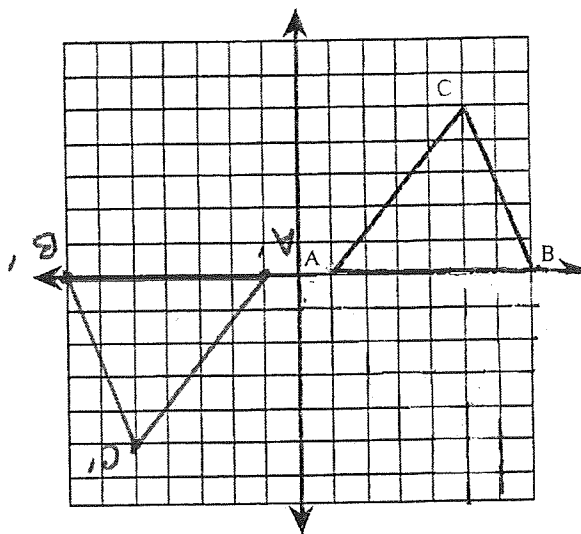2.   Draw quadrilateral FAST congruent to
      quadrilateral BIRD.

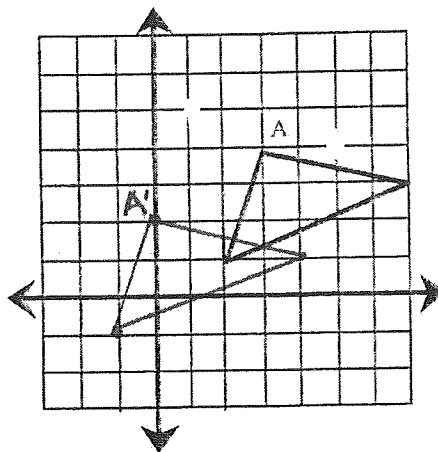3. Draw the triangle that results when $\triangle ABC$ is rotated $180°$ counterclockwise about the origin.

$A(1,0)$

$B(7,0)$

$C(5,5)$

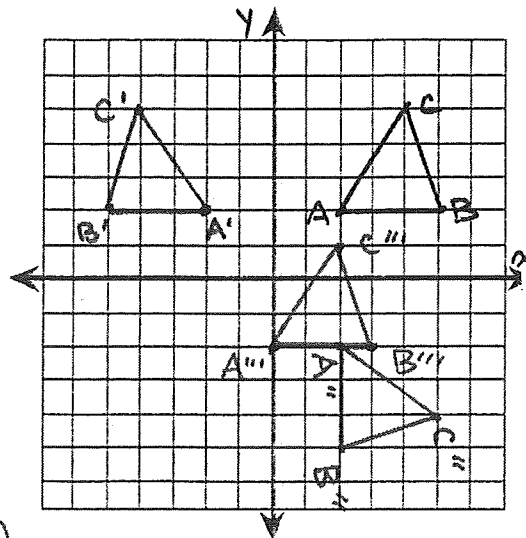4. Translate (slide) this figure so that point A is $(0,2)$.

5.   Plot the points A(2, 2), B(5, 2), and C(4, 5).

a)   Reflect △ABC across the y-axis and draw △A'B'C'.

b)   Rotate △ABC 90° around the origin clockwise and make △A"B"C".   ↩

c)   Translate △ABC $(x, y) \rightarrow (x - 2, y - 4)$

$$A \, (2,2) \quad (2-2, \, 2-4) \quad (0,-2)$$
$$B \, (5,2) \quad (5-2, \, 2-4) \quad (3,-2)$$
$$C \, (4,5) \quad (4-2, \, 5-4) \quad (2,1)$$

6.   Graph the figure and it's image under the given reflection

Quadrilateral ABCD with vertices A(-3,3), B(1,4), C(4,0), and D(-3,-3) in the line y = x.
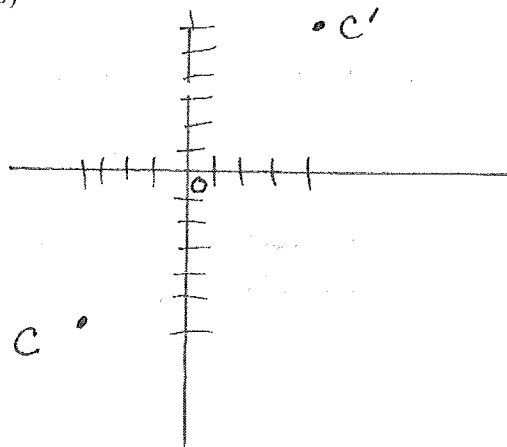
$$(a, b) \rightarrow (b, a)$$
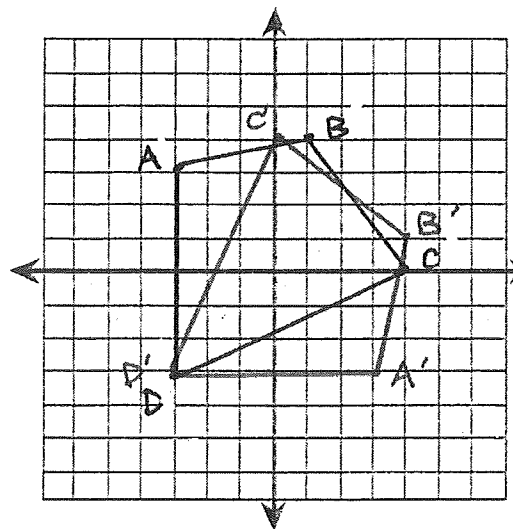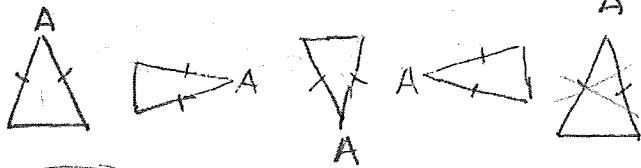
7.   Given C(-4,-6), under which reflection is C'(4,6)

    a. Reflected in the x-axis
    b. Reflected in the y- axis
    (c.) Reflected in the origin
    d. Reflected in y = x

$$(a, b) \rightarrow (-a, -b)$$

#8-10. Identify the order and magnitude of the rotational symmetry of each figure.

8. <u>Isosceles</u> Triangle

order = ____1____

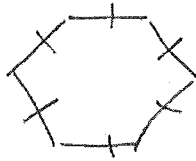magnitude= ___360___

$$\frac{360}{1} = 360$$

9. (Regular) 30 –gon

order = ___30___

magnitude= ___12___

$$\frac{360}{order} = \frac{360}{30} = 12$$

10. (Regular hexagon) 6 sides

order = ____6____

magnitude= ___60___

$$\frac{360}{order} = \frac{360}{6} = 60$$

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* #11-14. Find the measure of the dilation image M'N' or of the preimage MN using the given scale factors.

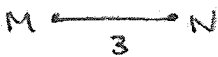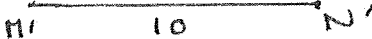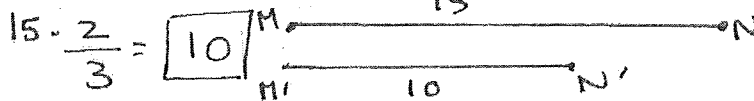MULTIPLY 11. MN = 3, r = 4   M —3— N

$$(3)(4) = \boxed{12}$$ M' ———12——— N'

____12____

DIVIDE 12. (M'N') = 21, r = 7

M' ——————— N'

$$\frac{21}{7} = \boxed{3}$$ M —3— N

____3____

MULTIPLY 13. MN = 15, r = 2/3

$$15 \cdot \frac{2}{3} = \boxed{10}$$ M ——15—— N

M' ——10—— N'

____10____

DIVIDE 14. (M'N') = 20, r = 1/2

$$20 \div \frac{1}{2} \Rightarrow 20 \cdot \frac{2}{1} \Rightarrow \boxed{40}$$

____40____

* YOU DO NOT NEED TO DRAW
   THE LINE SEGMENTS.