

6

90° clockwise rotation

\* see graph paper

$$A(2, 4) \rightarrow A'(4, -2)$$

$$B(4, 4) \rightarrow B'(4, -4)$$

$$C(4, 1) \rightarrow C'(1, -4)$$

$$D(2, 1) \rightarrow D'(1, -2)$$

270° clockwise rotation

$$A(2, 4) \rightarrow A'(-4, 2)$$

$$B(4, 4) \rightarrow B'(-4, 4)$$

$$C(4, 1) \rightarrow C'(-1, 4)$$

$$D(2, 1) \rightarrow D'(-1, 2)$$

\* Ignore the next two parts

7

Reflection

8

Rotation

9

Translation

10

No, translation 7 units to the right

11

Rotation 90° clockwise

12

Rotation 180° clockwise or counterclockwise

13

on graph paper

14

on graph paper

17

on graph paper

19

Yes, a 120° rotation is needed

20

Yes, 90°

21

Yes, 180°

\*  $270^\circ$  clockwise same as  $90^\circ$  counterclockwise      \* 3 units left 8 units up

(22)  $R(-7, -5) \rightarrow R'(5, -7) \rightarrow (x-3, y+8) \rightarrow R'(2, 1)$   
 $S(-1, -2) \rightarrow S'(2, -1) \rightarrow (x-3, y+8) \rightarrow S'(-1, 7)$   
 $T(-1, -5) \rightarrow T'(5, -1) \rightarrow (x-3, y+8) \rightarrow T'(2, 7)$

\* Reflect in x-axis       $180^\circ$  rotation

(23)  $J(-4, 4) \rightarrow (x, -y) \rightarrow (-4, -4) \rightarrow J'(4, 4)$   
 $K(-3, 4) \rightarrow (x, -y) \rightarrow (-3, -4) \rightarrow K'(3, 4)$   
 $L(-1, 1) \rightarrow (x, -y) \rightarrow (-1, -1) \rightarrow L'(1, 1)$   
 $M(-4, 1) \rightarrow (x, -y) \rightarrow (-4, -1) \rightarrow M'(4, 1)$

(26) on graph paper

(27) Do rotations first  $\rightarrow 180^\circ$  then,  $90^\circ$  counterclockwise  
Do the reflection  
Do the translation

(28)

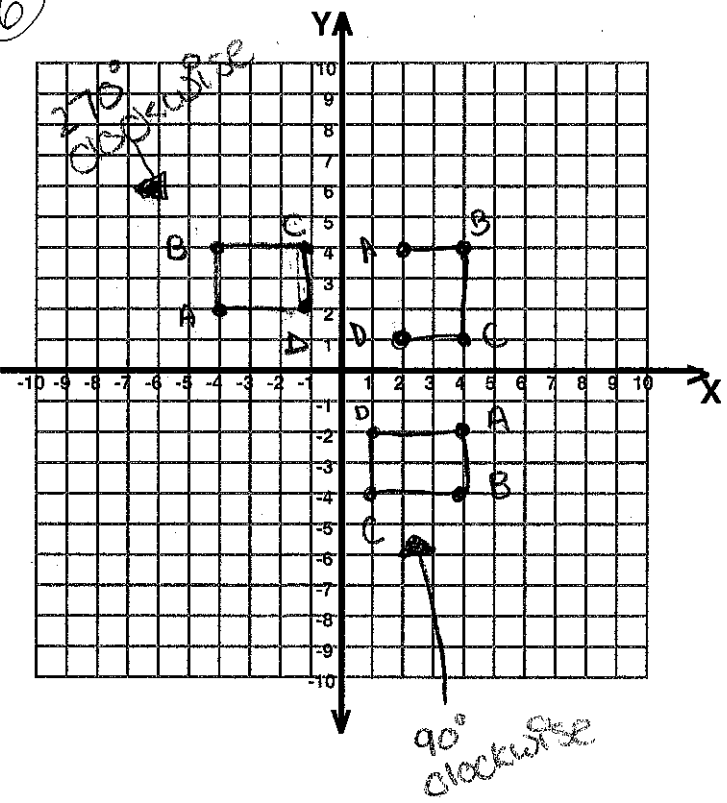
$$A(2, -2) \rightarrow A'(-2, 2)$$

$$B(4, -1) \rightarrow B'(1, 4)$$

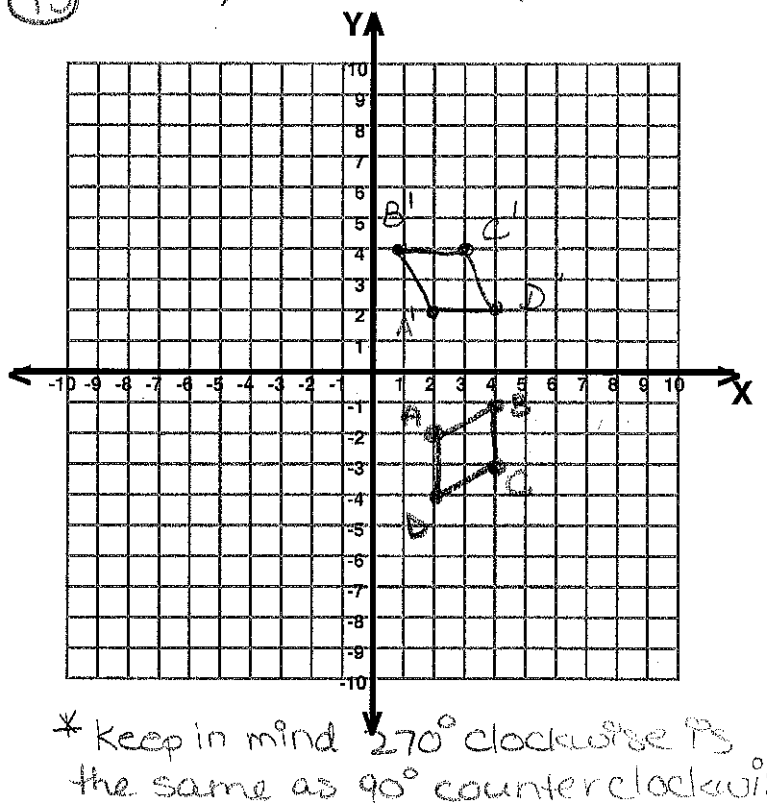
$$C(4, -3) \rightarrow C'(3, 4)$$

$$D(2, -4) \rightarrow D'(4, 2)$$

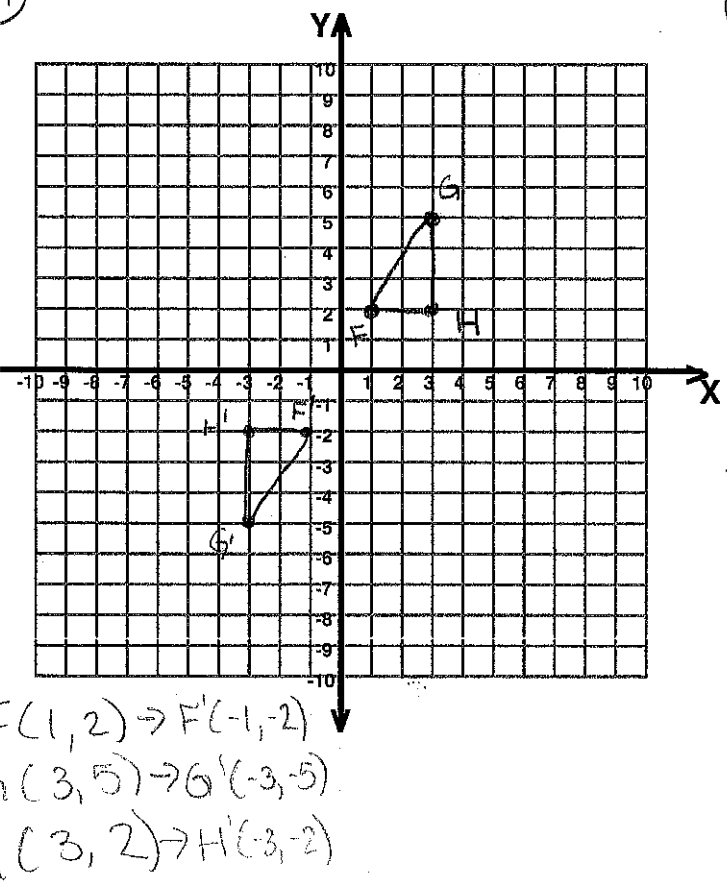
⑥



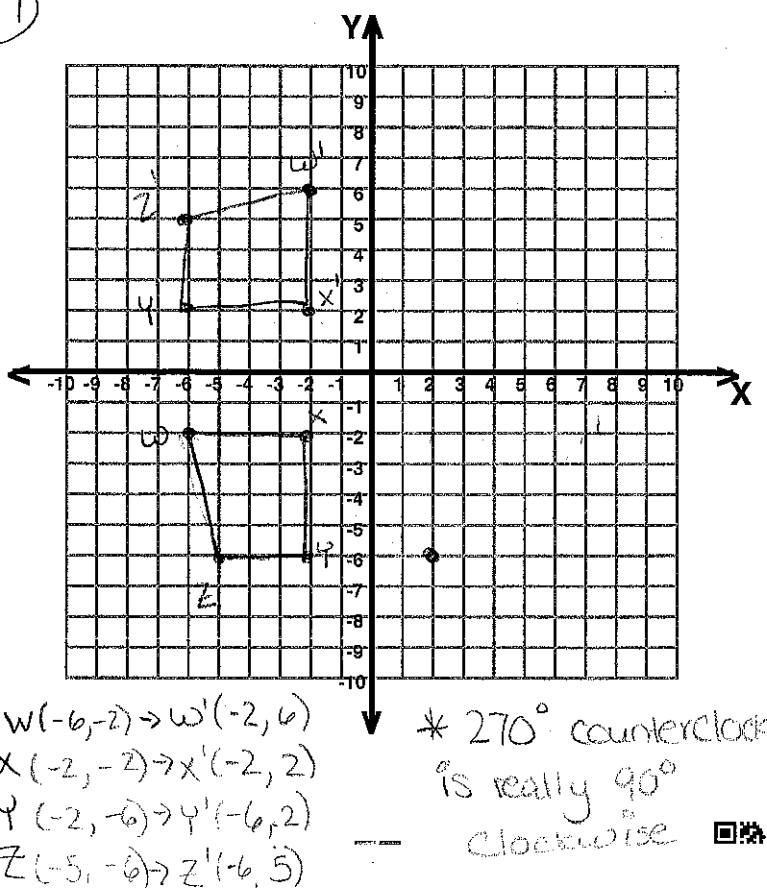
⑬



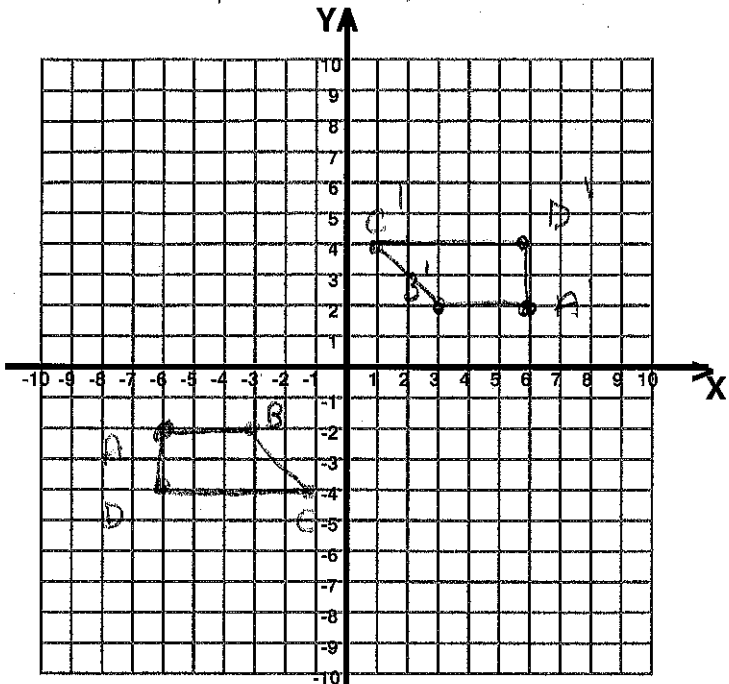
⑭



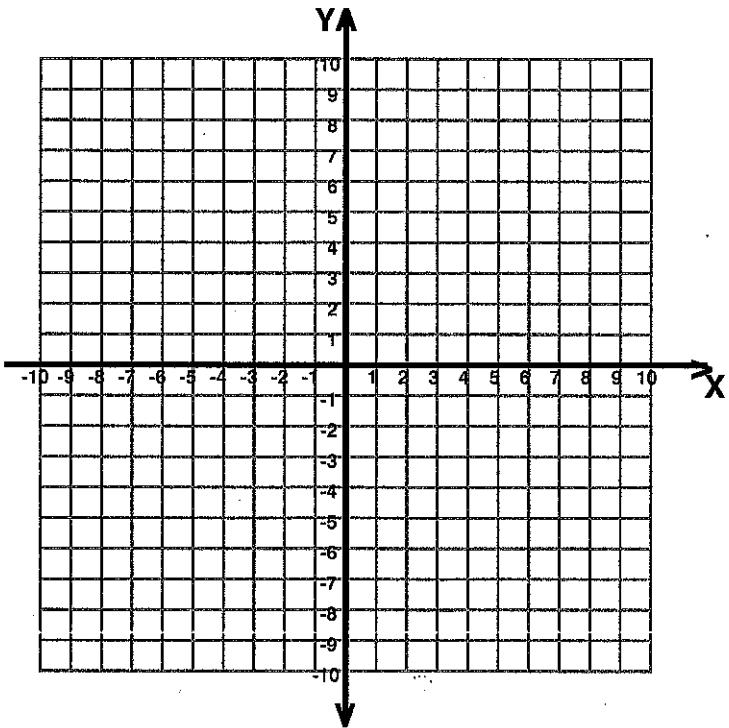
⑰



- (26)  $A(-6, -2) \rightarrow (6, 2) A'$   
 $B(-3, -2) \rightarrow (3, 2) B'$   
 $C(-1, -4) \rightarrow (1, 4) C'$   
 $D(-6, -4) \rightarrow (6, 4) D'$

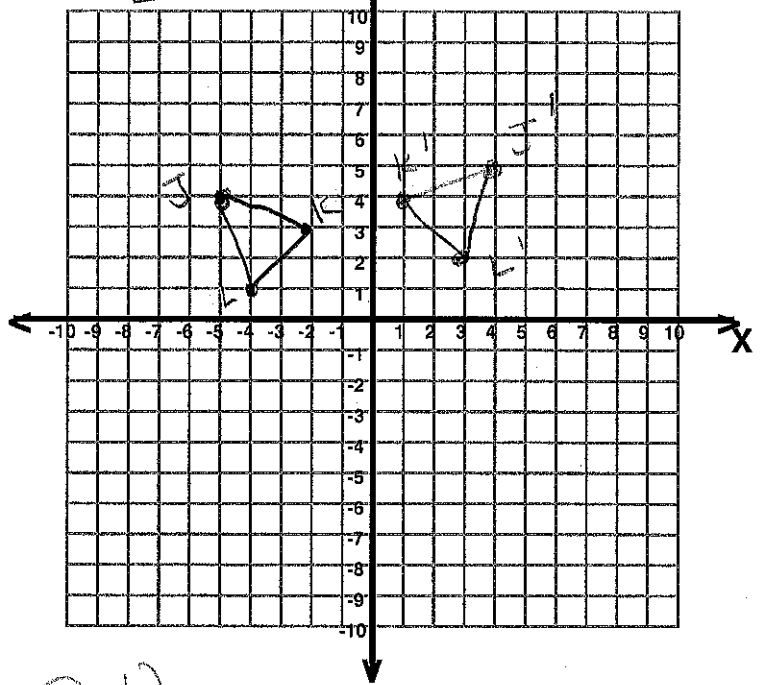


Reflect over y axis, then x-axis  
 or  
 Reflect over x axis, then y-axis

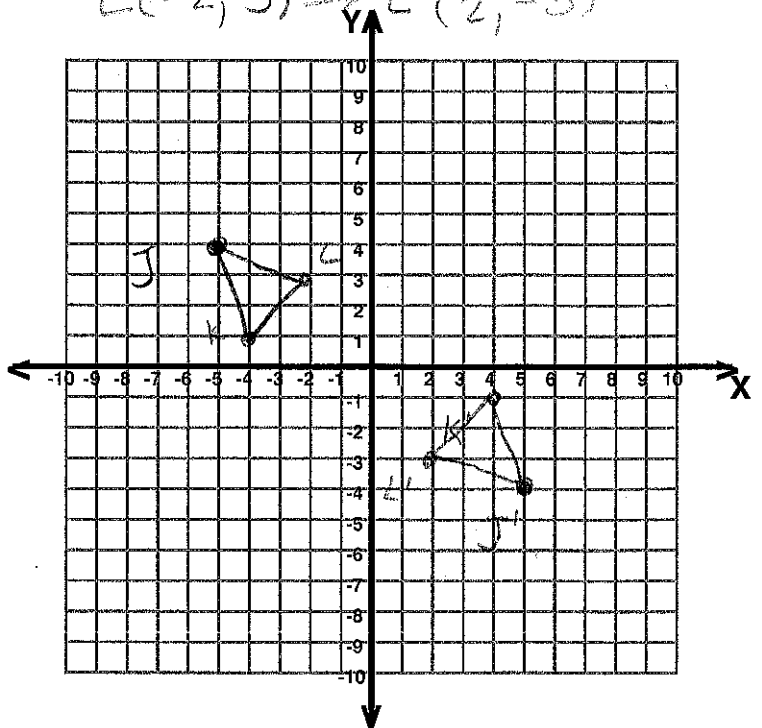


- (28)  $J(-5, 4) \rightarrow (4, 5)$   
 a)  $K(-4, 1) \rightarrow (1, 4)$   
 $L(-2, 3) \rightarrow (3, 2)$

$$(x, y) \rightarrow (y-x)$$



- (28) b)  
 $J(-5, 4) \rightarrow J'(5, -4)$   
 $K(-4, 1) \rightarrow K'(4, -1)$   
 $L(-2, 3) \rightarrow L'(2, -3)$



$$(x, y) \rightarrow (-x, -y)$$

c) yes