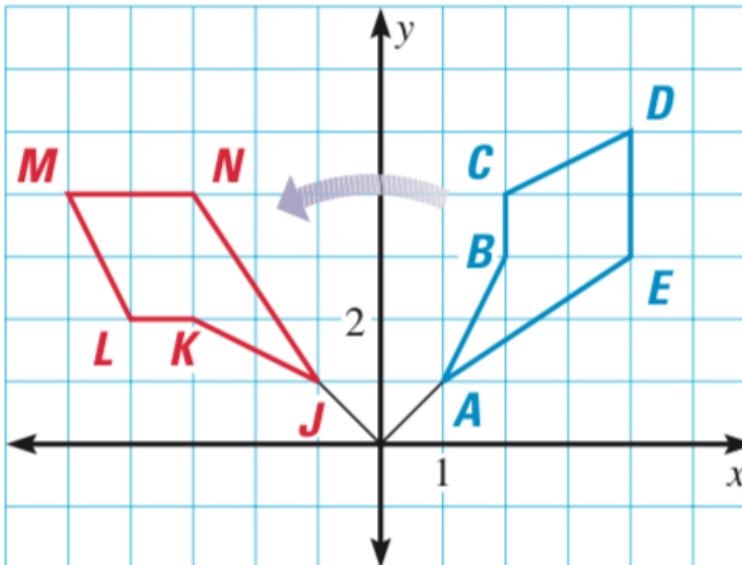


# Chapter 7 Test Review

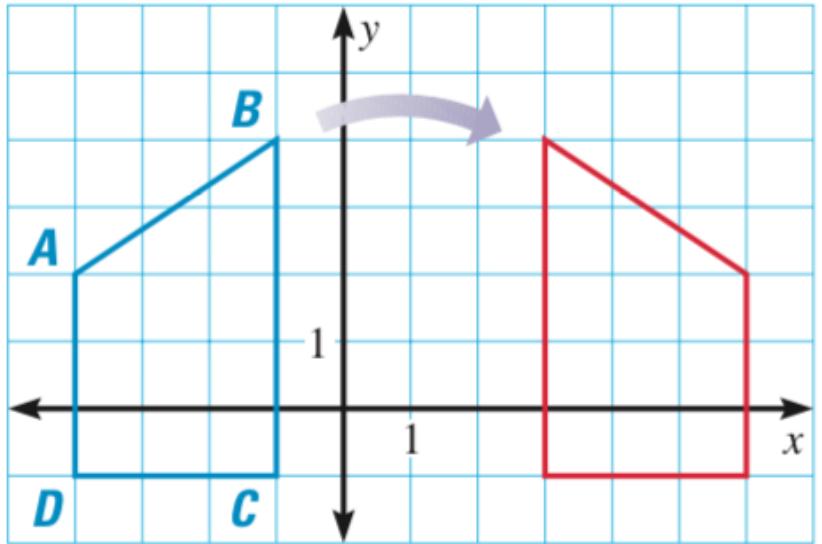
1)



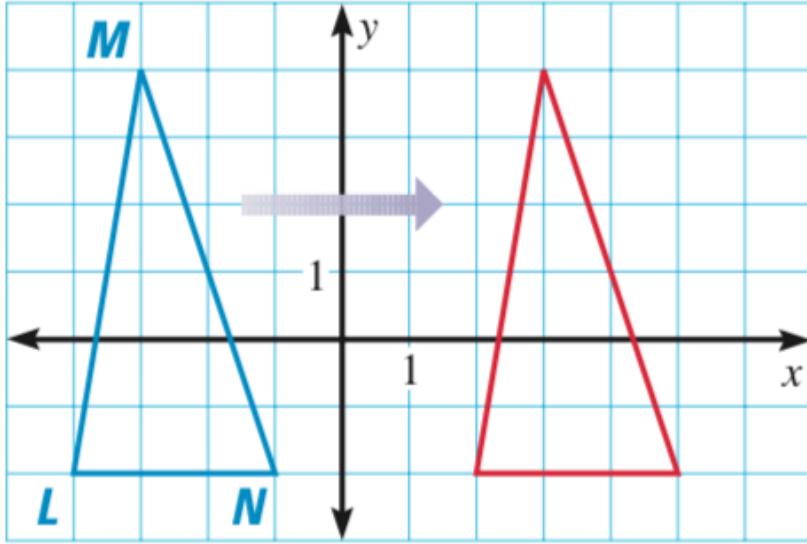
12. Figure  $ABCDE \rightarrow$  Figure JKLMN
13. Name and describe the transformation. rotation  $90^\circ$  CCW
14. Name two sides with the same length. MN + DE (several answers)
15. Name two angles with the same measure.  $\angle A + \angle J$  (several answers)

2)

21.



22.



reflection across

$$x = 1$$

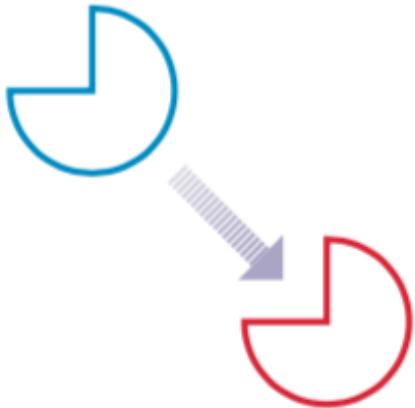
$$\begin{array}{ll} A'(6, 2) & B'(3, 4) \\ C'(3, -1) & D'(6, -1) \end{array}$$

translation 6 right

$$\begin{array}{ll} M'(7, 4) & L'(7, -2) \\ N'(8, -2) & \end{array}$$

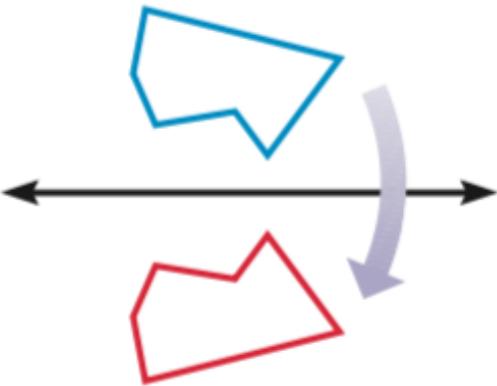
3)

23.



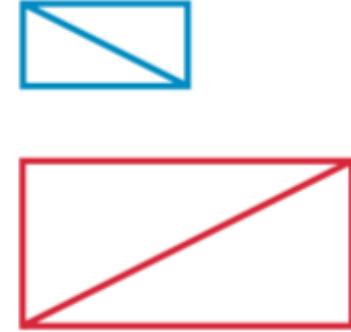
yes

24.



yes

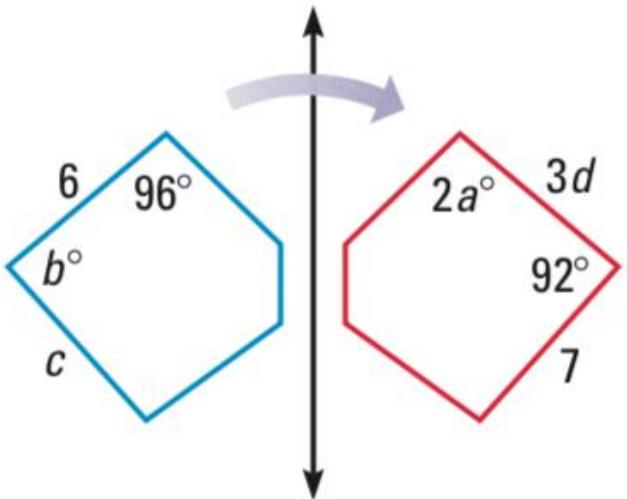
25.



no

4)

34.



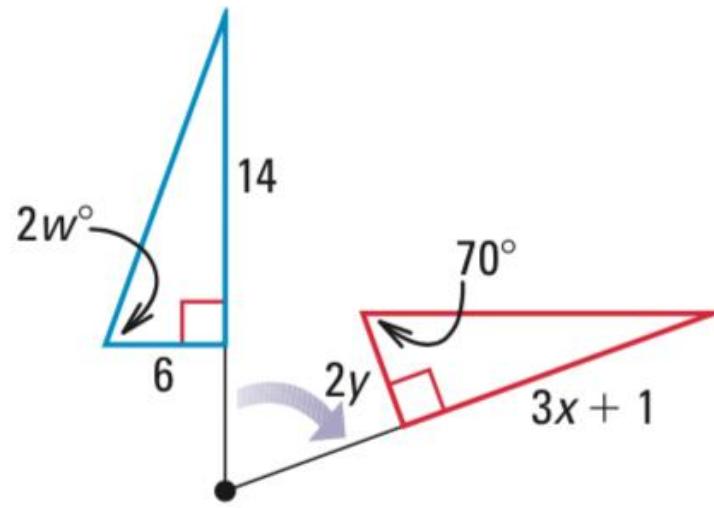
$$\frac{2a}{2} = \frac{96}{2} \rightarrow a = 48$$

$$b = 92$$

$$c = 7$$

$$\frac{3d}{3} = \frac{6}{3} \rightarrow d = 2$$

35.



$$\frac{2w}{2} = \frac{70}{2} \rightarrow w = 35$$

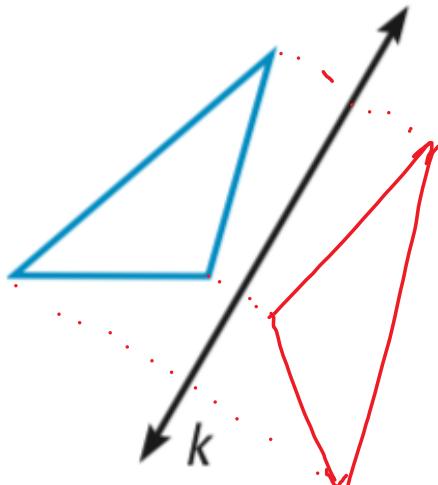
$$3x + 1 = 14$$

$$\cancel{\frac{3x}{3}} = \frac{13}{3} \rightarrow x = 13/3$$

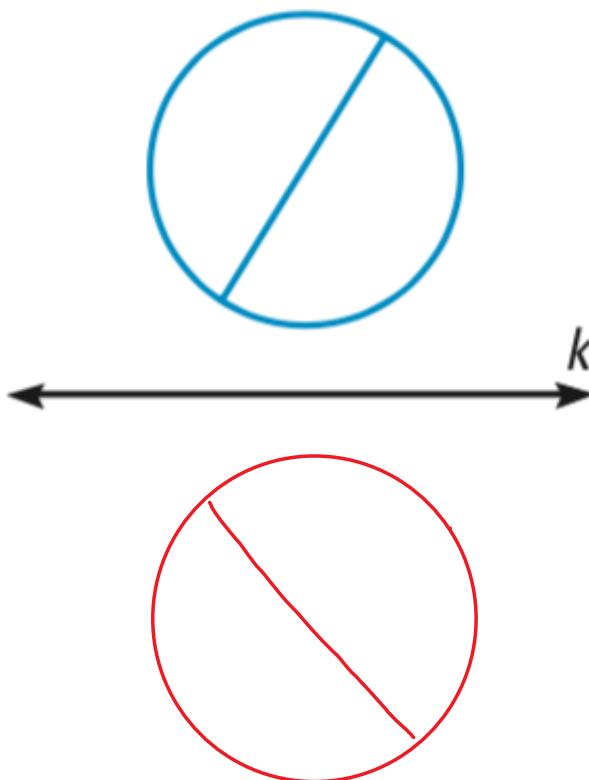
$$\frac{2y}{2} = \frac{6}{2} \rightarrow y = 3$$

5)

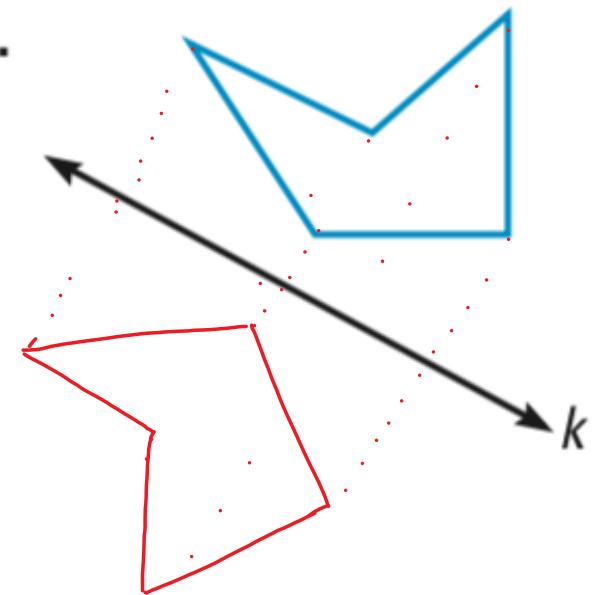
15.



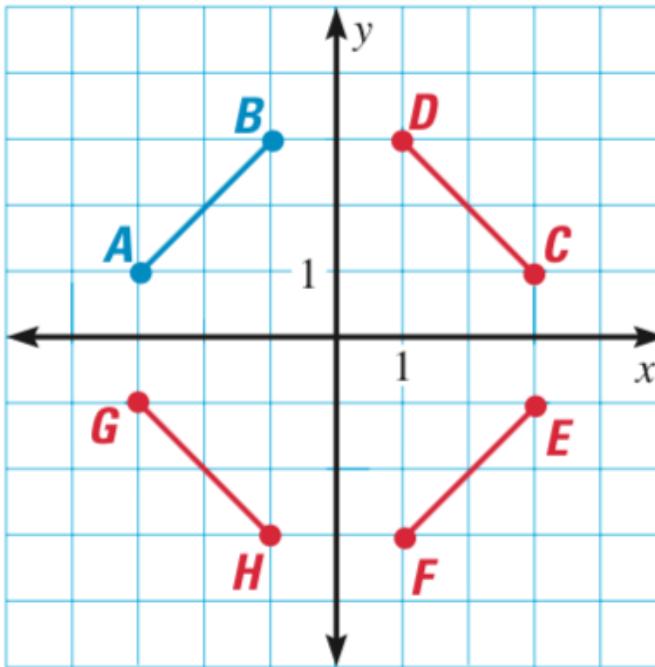
16.



17.



6)



22. Reflection in the  $x$ -axis  $\text{GH}$

23. Reflection in the  $y$ -axis  $\text{CD}$

24. Reflection in the line  $y = x$   $\text{FE}$

25. Reflection in the  $y$ -axis, followed by a reflection in the  $x$ -axis.  $\text{EF}$

7-8)

26.  $S(0, 2)$  reflected in the  $x$ -axis

$$(0, -2)$$

27.  $T(3, 8)$  reflected in the  $x$ -axis

$$(3, -8)$$

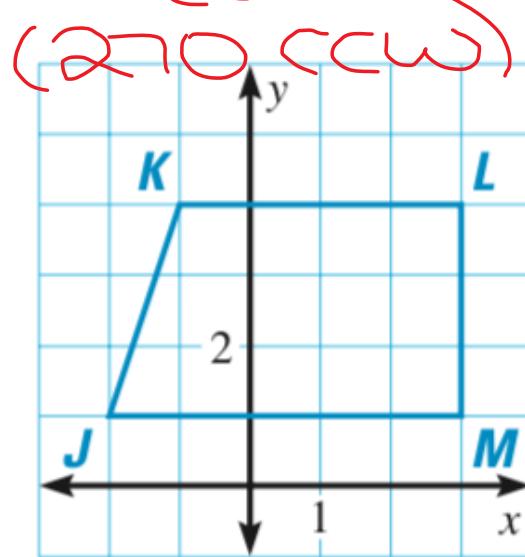
28.  $Q(-3, -3)$  reflected in the  $y$ -axis

$$(3, -3)$$

29.  $R(7, -2)$  reflected in the  $y$ -axis

$$(-7, -2)$$

9)

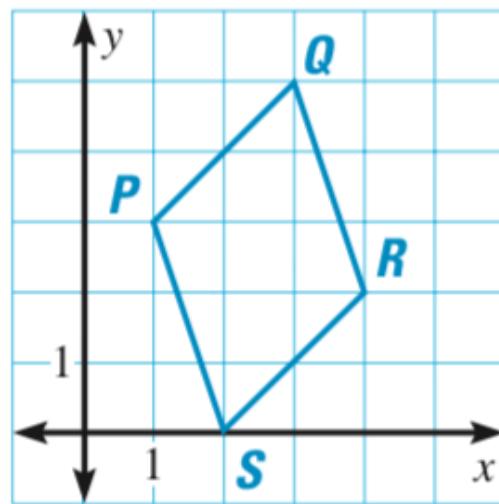
25.  $90^\circ$  CW

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

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

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

$$M(3, 1) \rightarrow M'(-1, -3)$$

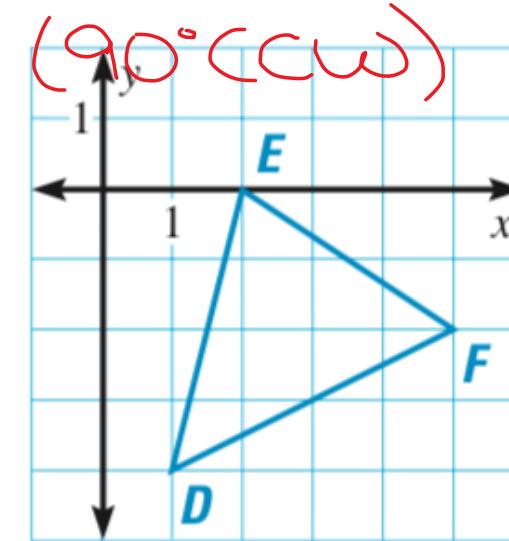
26.  $180^\circ$ 

$$P(1, 3) \rightarrow P'(-1, -3)$$

$$Q(3, 5) \rightarrow Q'(-3, -5)$$

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

$$S(2, 0) \rightarrow S'(-2, 0)$$

27.  $270^\circ$  CW

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

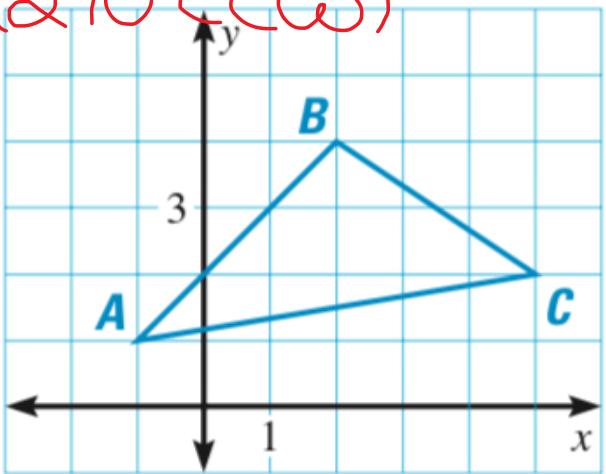
$$E(2, 0) \rightarrow E'(0, 2)$$

$$F(5, -2) \rightarrow F'(2, 5)$$

10)

28.  $90^\circ$  clockwise about origin

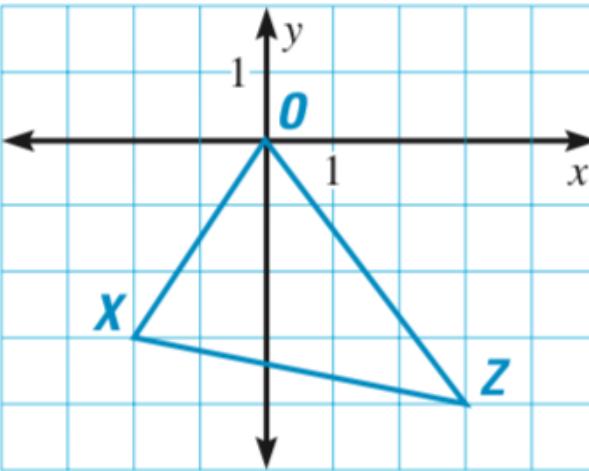
(270 CCW)



$$A(-1, 1) \rightarrow A'(1, -1)$$

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

$$C(5, 2) \rightarrow C'(2, -5)$$

29.  $180^\circ$  clockwise about origin

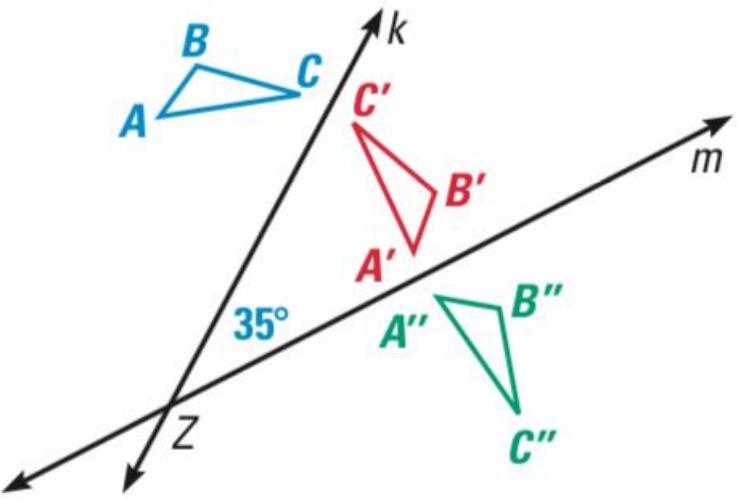
$$O(0, 0) \rightarrow O'(0, 0)$$

$$X(-2, -3) \rightarrow X'(2, 3)$$

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

11)

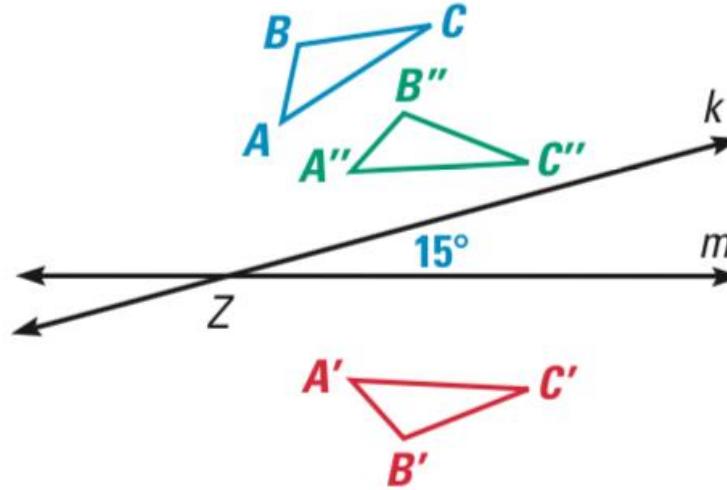
30.



$$35 \times 2$$

$$-70^\circ$$

31.

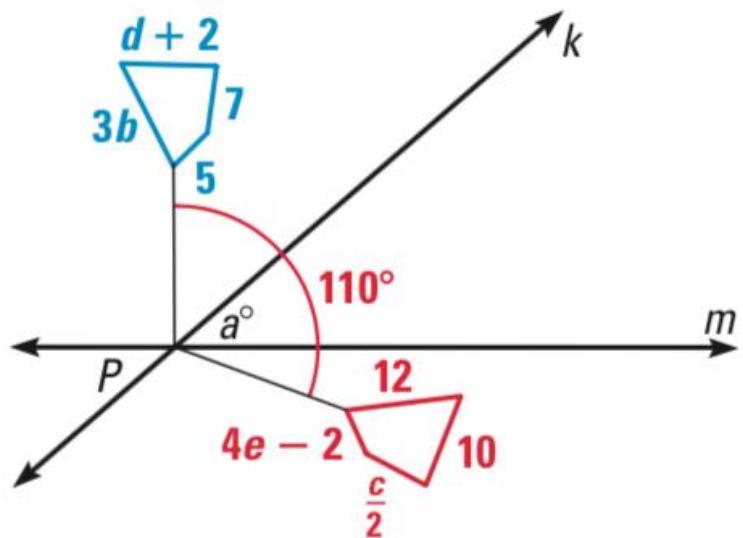


$$15 \times 2$$

$$30^\circ$$

12)

34.



$$a = 55 \quad (110/2)$$

$$3b = 12 \rightarrow b = 4$$

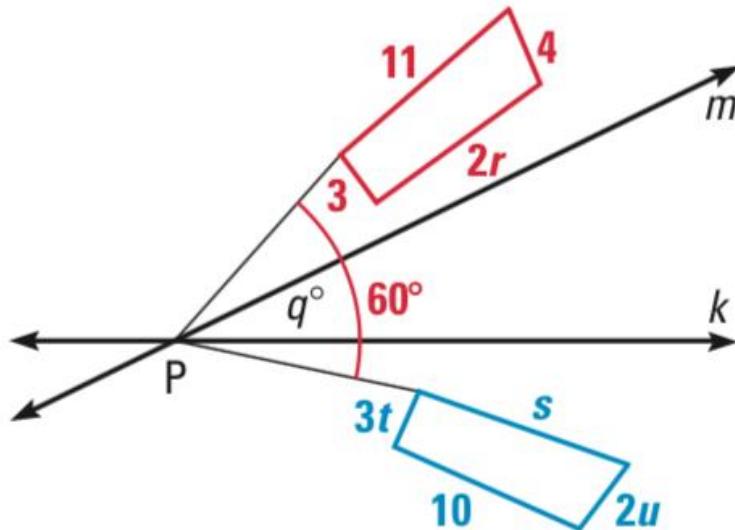
$$\frac{c}{2} = 7 \rightarrow c = 14$$

$$d + 2 = 10 \rightarrow d = 8$$

$$4e - 2 = 5 \rightarrow e = 7/4$$

$e = 7/4$

35.



$$q = 30 \quad (60/2)$$

$$2r = 10 \rightarrow r = 5$$

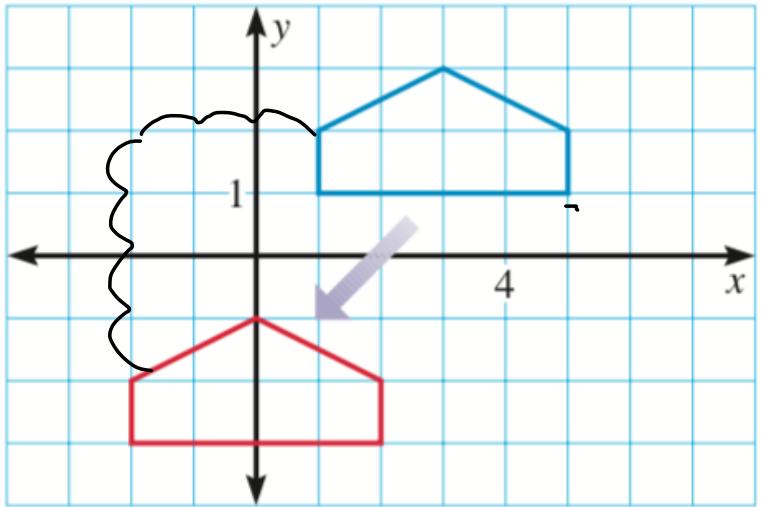
$$s = 11$$

$$3t = 3 \rightarrow t = 1$$

$$2u = 4 \rightarrow u = 2$$

13)

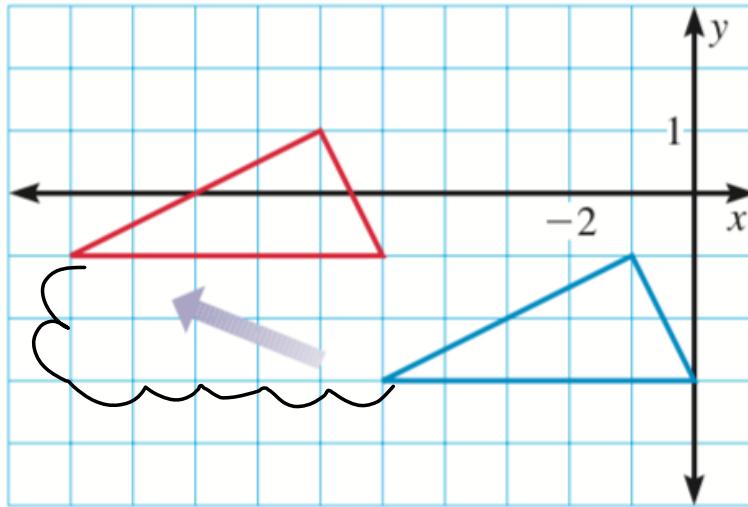
15.



a)  $(x, y) \rightarrow (x-3, y-4)$

b)  $\langle -3, -4 \rangle$

16.

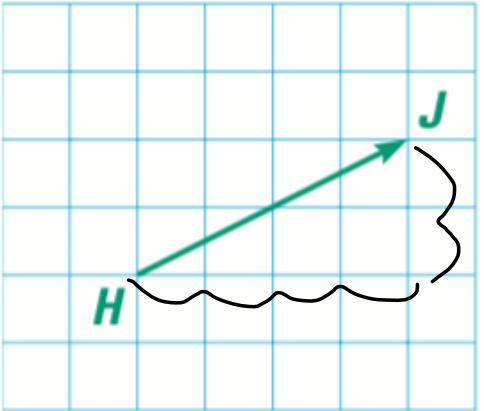


a)  $(x, y) \rightarrow (x-5, y+2)$

b)  $\langle -5, 2 \rangle$

14)

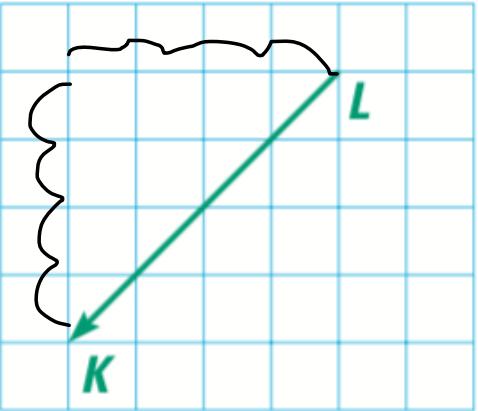
17.



$$\overrightarrow{HJ}$$

$$\langle 4, 2 \rangle$$

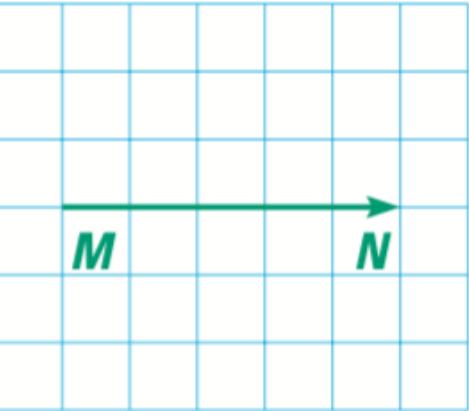
18.



$$\overrightarrow{KL}$$

$$\langle -4, -4 \rangle$$

19.



$$\overrightarrow{MN}$$

$$\langle 5, 0 \rangle$$

15)

$$(x, y) \rightarrow (x + 12, y - 7).$$

25. What is the image of  $(5, 3)$ ?

$$(5+12, 3-7)$$

$$(17, -4)$$

26. What is the image of  $(-1, -2)$ ?

$$(-1+12, -2-7)$$

$$(11, -9)$$

27. What is the preimage of  $(-2, 1)$ ?

$$(x+12, y-7) = (-2, 1)$$

$$\begin{aligned} x+12 &= -2 & y-7 &= 1 \\ x &= -14 & y &= 8 \end{aligned}$$

$$(-14, 8)$$

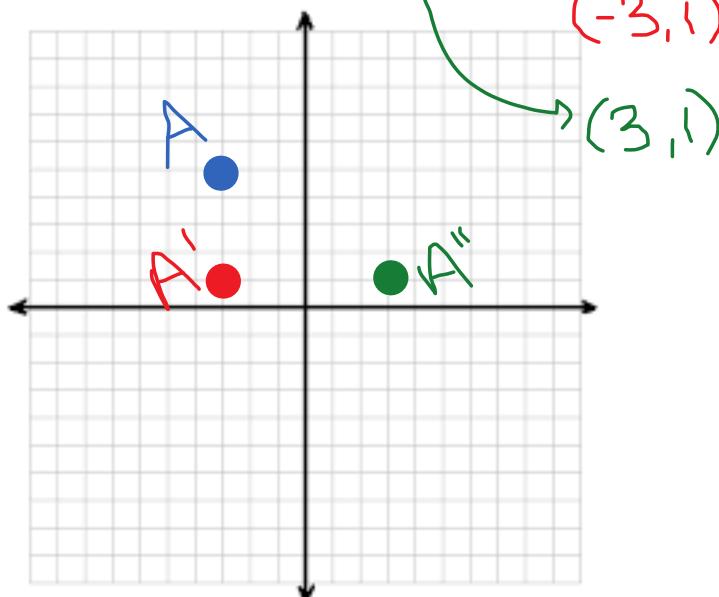
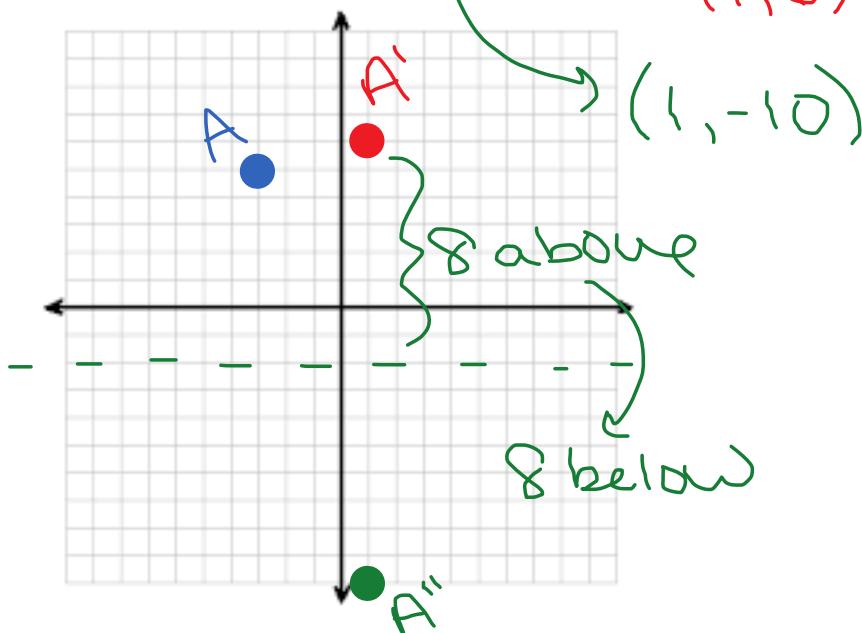
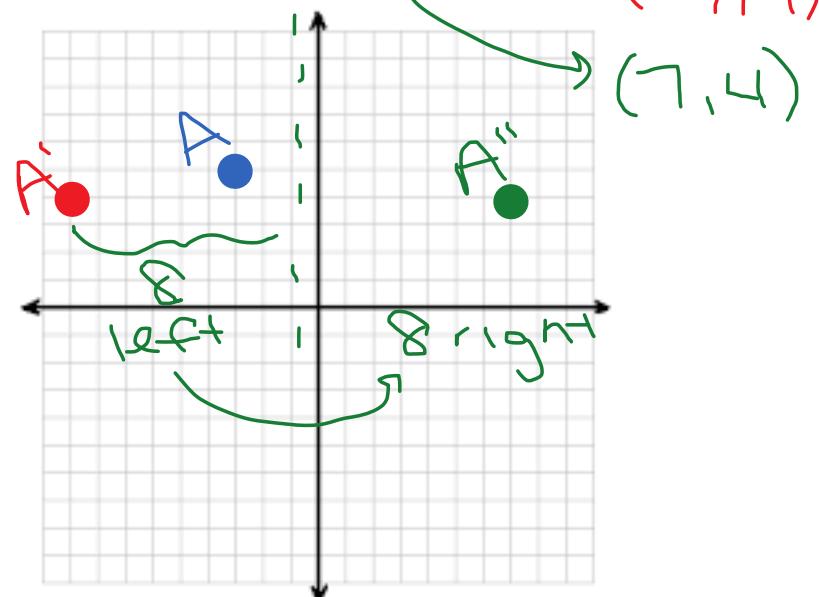
28. What is the preimage of  $(0, -6)$ ?

$$(x+12, y-7) = (0, -6)$$

$$\begin{aligned} x+12 &= 0 & y-7 &= -6 \\ x &= -12 & y &= 1 \end{aligned}$$

$$(-12, 1)$$

16)

**A(-3, 5)**12 **Translation:**  $(x, y) \rightarrow (x, y - 4)$ **Reflection:** in the y-axis13 **Translation:**  $(x, y) \rightarrow (x + 4, y + 1)$ **Reflection:** in  $y = -2$ 14 **Translation:**  $(x, y) \rightarrow (x - 6, y - 1)$ **Reflection:** in  $x = -1$ 

17)

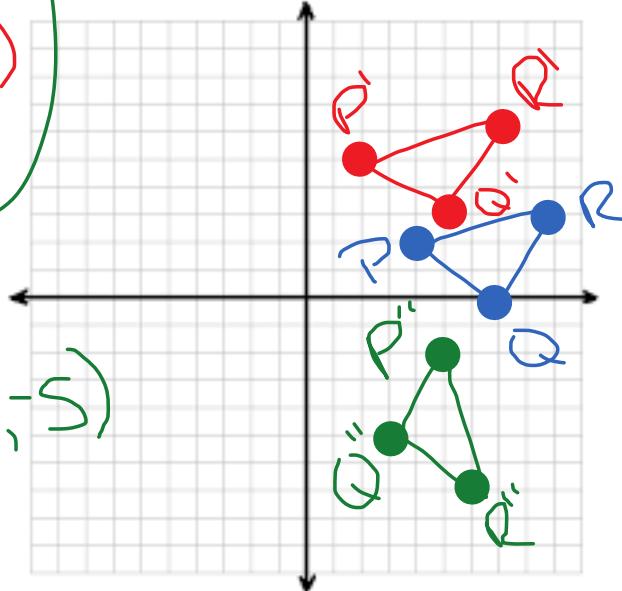
16.  $P(4, 2), Q(7, 0), R(9, 3)$ Translation:  $(x, y) \rightarrow (x - 2, y + 3)$ Rotation:  $90^\circ$  clockwise about  $(-2, 3)$ 

$$P'(2, 5) \quad Q'(5, 3)$$

$$R'(1, 6)$$

$$P''(5, -2) \quad Q''(3, -5)$$

$$R''(6, -7)$$

17.  $P(4, 5), Q(7, 1), R(8, 8)$ Translation:  $(x, y) \rightarrow (x, y - 7)$ 

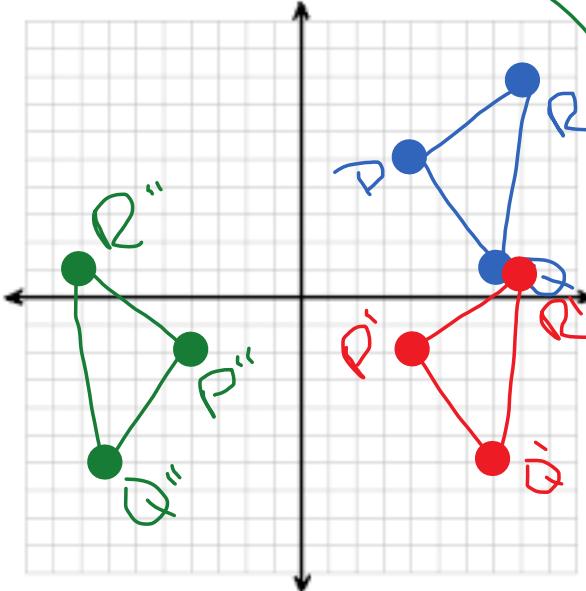
Reflection: in the y-axis

$$P'(4, -2) \quad Q'(7, -6)$$

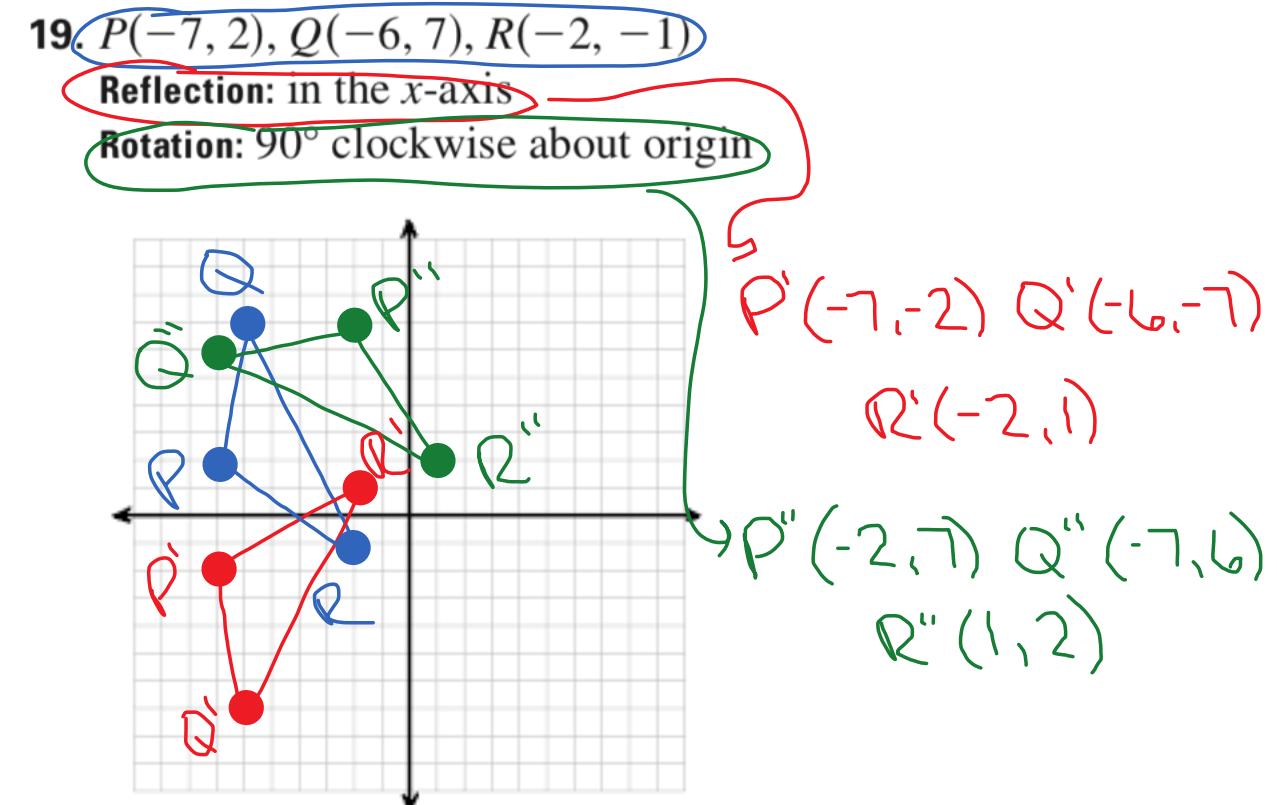
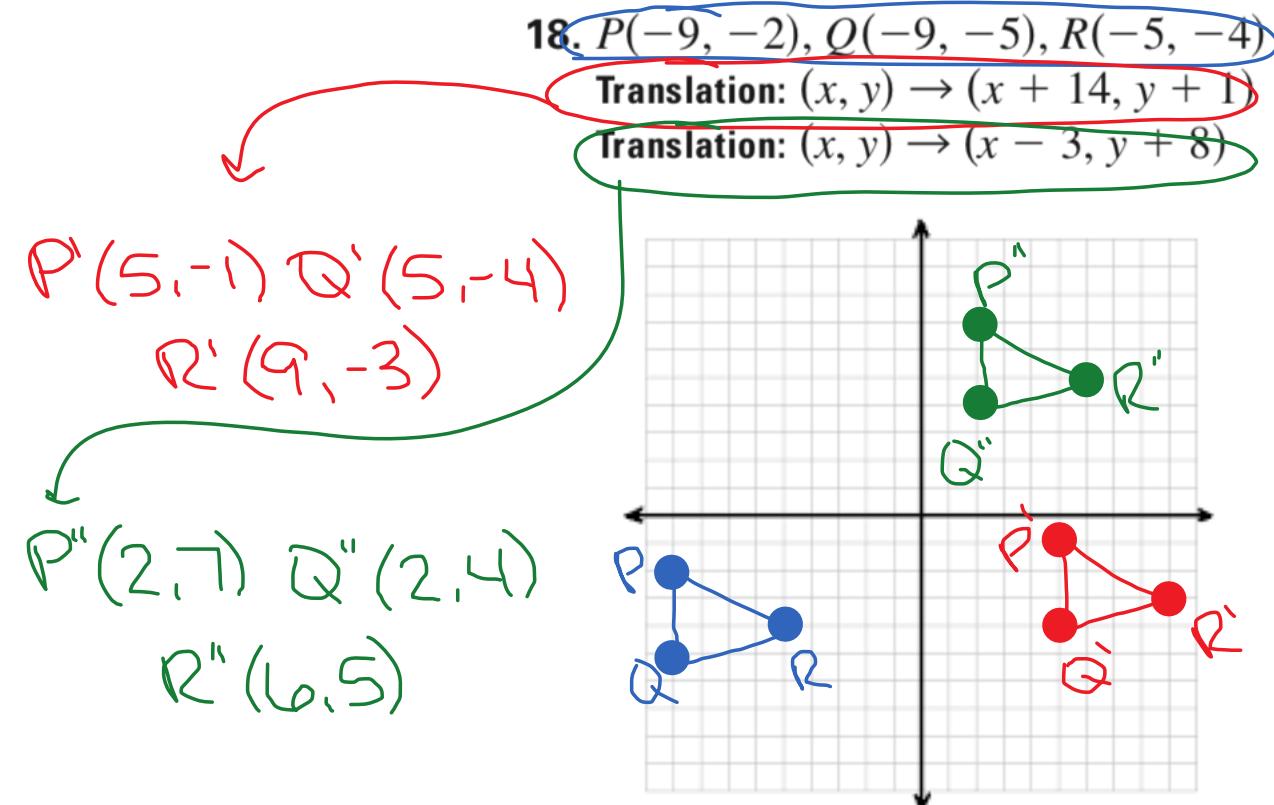
$$R'(8, 1)$$

$$P''(-4, -2) \quad Q''(-7, -6)$$

$$R''(-8, 1)$$



# 17) (CONTINUED)

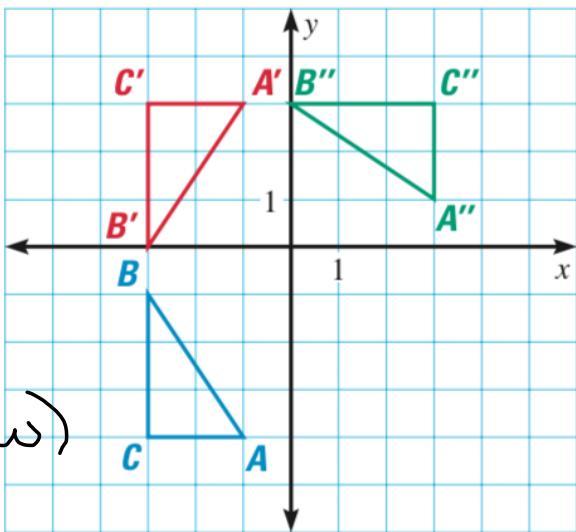


18-19)

reflect over  
 $y = -0.5$

rotate 90° CW  
(270° CCW)

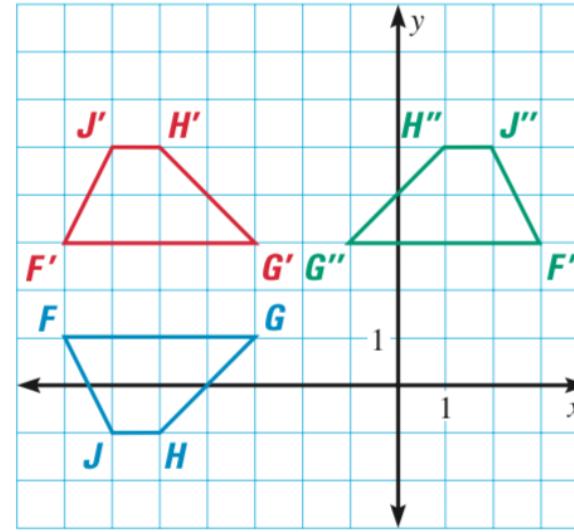
22.



reflect over  
 $y = 2$

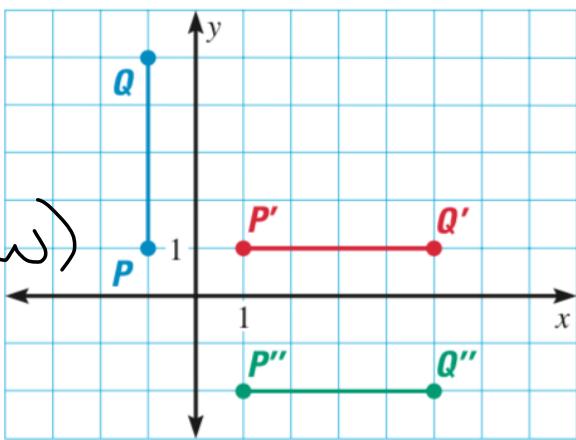
reflect over  
 $x = -2$

23.



rotate 90° CW  
(270° CCW)  
translate  
down 3

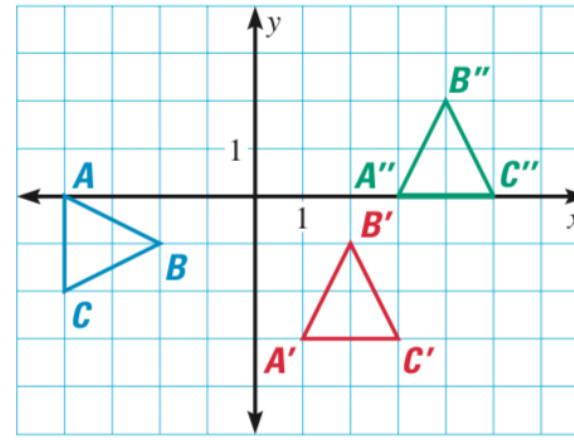
24.



rotate 270° CW  
(90° CCW)

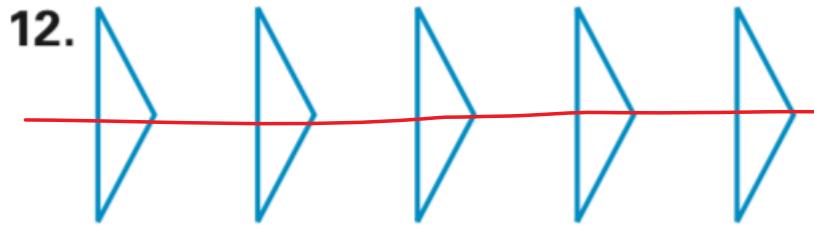
translate  
right 2 +  
up 3

25.



20)

THG



TR

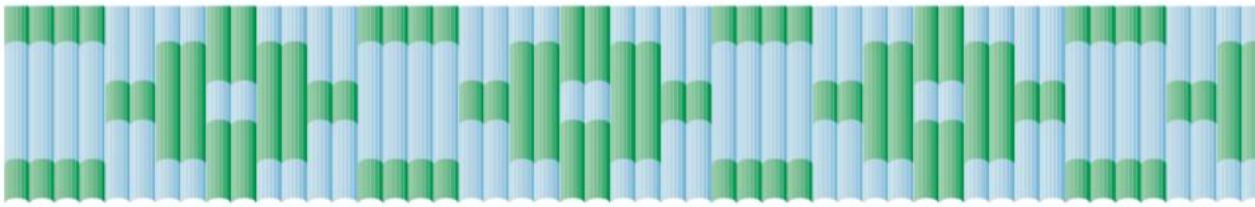
TR



TRHVG

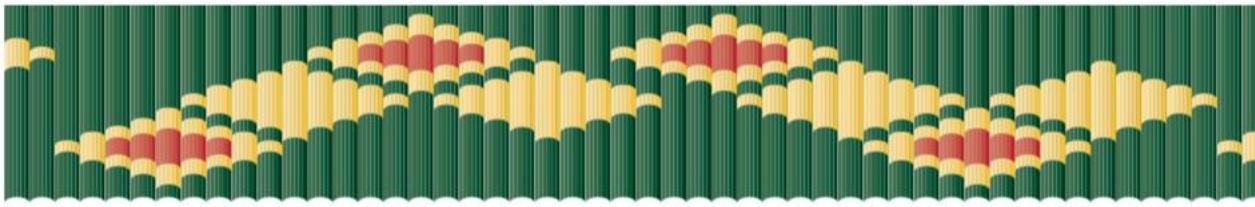
21)

21.



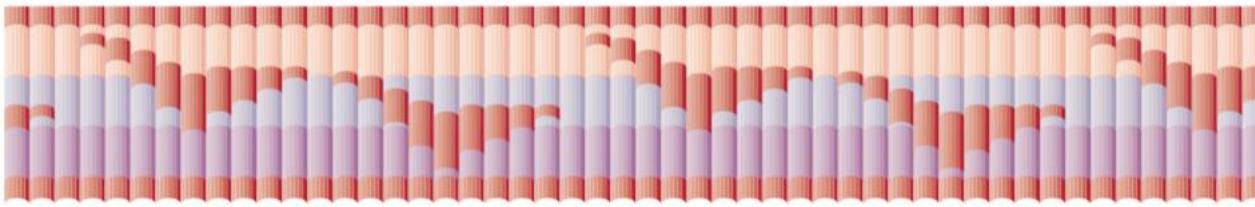
TRHNG

22.



TG

23.



T

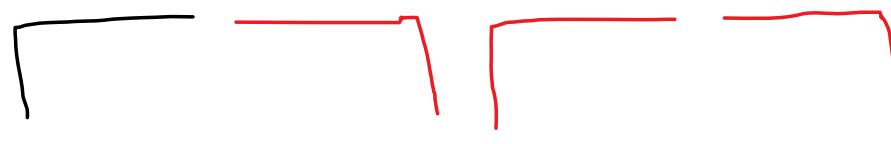
22)



**26. TR**



**27. TV**



**28. TG**



**29. THG**

