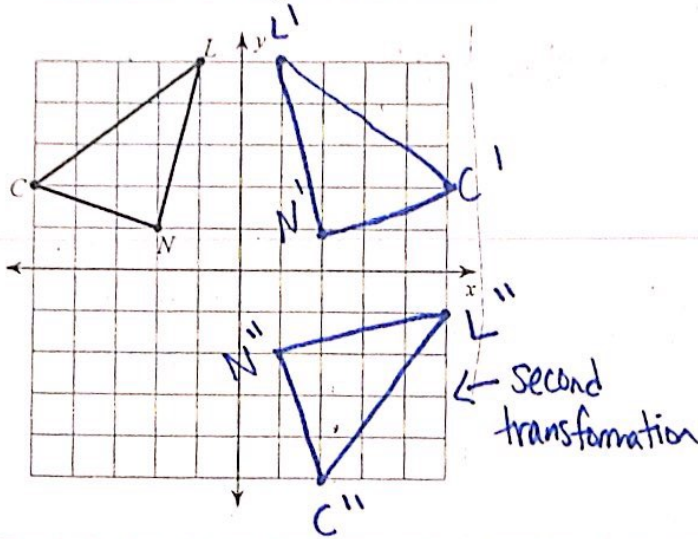


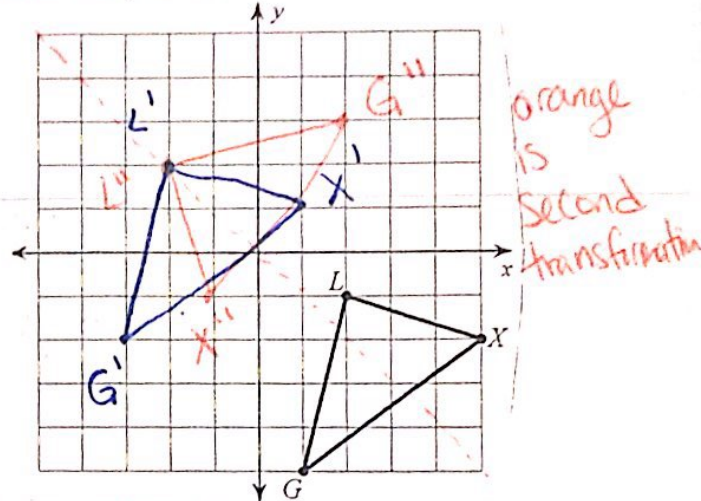
G2 B Level Test Review

Perform the following transformations. Label all transformations using prime notation.

- 1) Reflect the image across the y-axis and then rotate it 90 degrees clockwise.

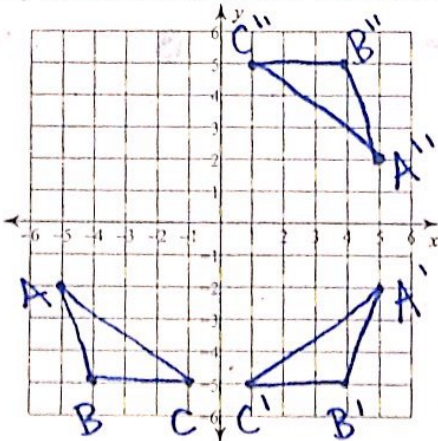


- 2) Translate the image according to the rule  $(x, y) \rightarrow (x - 4, y + 3)$  and then reflect it across the line  $y = -x$ .

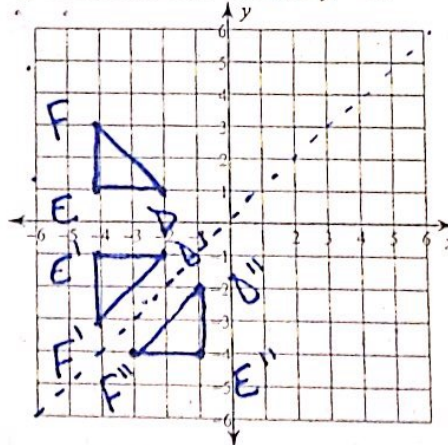


For 3-4, plot the points to make a shape and then perform the transformations. Label all transformations using prime notation.

- 3) a) Plot  $A(-5, -2)$ ,  $B(-4, -5)$ ,  $C(-1, -5)$   
 b) Reflect  $ABC$  across the y-axis.  
 c) Reflect  $A'B'C'$  across the x-axis.



- 4) a) Plot  $D(-2, 1)$ ,  $E(-4, 1)$ ,  $F(-4, 3)$   
 b) Reflect  $DEF$  across the x-axis.  
 c) Reflect  $D'E'F'$  across  $y = x$ .



Use problem 3 to answer problem 5.

- 5) Describe a single transformation to go from triangle  $ABC$  to triangle  $A''B''C''$ . State the type of transformation and how far it went. Also write the rule using  $(x, y) \rightarrow (x', y')$  notation.

Type: Rotation

Description: 180° about the origin

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

Use problem 4 to answer problem 6.

- 6) Describe a single transformation to go from triangle  $DEF$  to triangle  $D''E''F''$ . State the type of transformation and how far it went. Also write the rule using  $(x, y) \rightarrow (x', y')$  notation.

Type: Rotation

Description: 90° Counterclockwise about the origin

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



Find the measure of the angle indicated with the arrow.

7) alternate exterior angles ( $\cong$ )

$10x + 10 = 12x - 6$   
 $-10x + 10x = 12x - 6 - 10x + 10$   
 $16 = 2x$   
 $\frac{16}{2} = \frac{2x}{2}$   
 $8 = x$

10(8) = 90  
 $= 90^\circ$

8)

$8x - 2 + 7x + 7 + 40 = 180$   
 $15x + 45 = 180$   
 $-45 -45$   
 $15x = 135$   
 $\frac{15x}{15} = \frac{135}{15}$   
 $x = 9$

$8(9) - 2 = 70^\circ$

Find the value of  $x$  that makes lines  $u$  and  $v$  parallel.

9)

$5x + 5 = 45$   
 $-5 -5$   
 $5x = 40$   
 $\frac{5x}{5} = \frac{40}{5}$   
 $x = 8$

10)

$13x = 130$   
 $\frac{13x}{13} = \frac{130}{13}$   
 $x = 10$

Use Figure 1 to answer problems 11 - 14. Figure is not drawn to scale.

All answers below can be found multiple ways with the same result.

11) What is the measure of angle 4? State how you know.

$54 + 28 + x = 180$   
 $x + 82 = 180$   
 $x = 98$

Angle 4 =  $98^\circ$   
 Reason:  $\angle 4$  is part of a triangle with angles  $54^\circ$  and  $28^\circ$ .  $54 + 28 + 98 = 180$

12) What is the measure of angle 6? State the value and the type of angle pair you used to find the angle measure.

Angle 6 =  $118^\circ$   
 Angle relationship used: corresponding angles ( $\angle 6$  and the  $118^\circ$  angle are corresponding)

13) Is the relationship between angle 6 and angle 9 complementary, supplementary, congruent, or none of these? State how you know.

Angle 9 and angle 6 are supplementary  
 Reason:  $\angle 6$  and  $\angle y$  are corresponding angles so they are  $\cong$ .  $\angle y$  and  $\angle 9$  are a linear pair, so they are supplementary. This means  $\angle 6$  and  $\angle 9$  are supplementary, too.

14) Find the angle measures of angle 7 and angle 8 and state what type of angle pair they are.

Angle 7 =  $180 - 52 = 128^\circ$   
 Angle 8 =  $28 + 24 = 52^\circ$   
 Angle 7 and Angle 8 are a linear pair (so they are supplementary)

Reason:  $\angle 8$  is an alt. interior angle with the angle made up of the  $24^\circ$  and  $28^\circ$  angles. This means they are congruent. (the angles referred to are marked as congruent angles).

Figure 1

