10.2H Slide Left; Slide Right   Name: _____Per: _____

SHOW YOUR WORK AND WORK IN PENCIL.

Use the translation rule of $(x, y) \rightarrow (x + 5, y - 9)$ for questions below.

1. What are the new coordinates of A' if the image of A is $(-6, 3)$?

2. What are the new coordinates of B' if the image of B is $(4, 8)$?

The vertices of $\triangle ABC$ are $A(-6, -7), B(-3, -10)$ and $C(5, 2)$. Find the vertices of $\triangle A'B'C'$, given the following translations rules below.
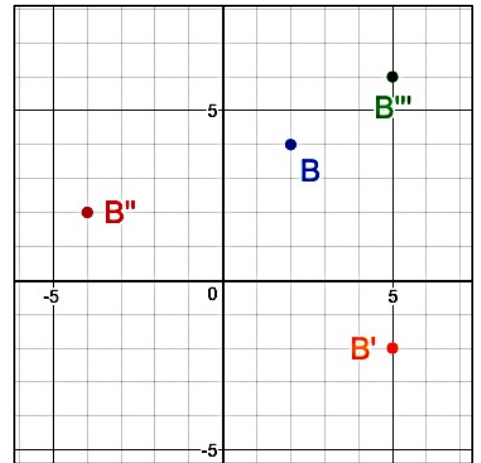
3. $(x, y) \rightarrow (x - 2, y - 7)$

   A'_____ B'_____ C'_____

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

   A'_____ B'_____ C'_____

5. The coordinates of $\triangle DEF$ are $D(4, -2)$, $E(7, -4)$ and $F(5, 3)$. Translating $\triangle DEF$ to the right 5 units and up 11 units and write the coordinates for the new triangle.
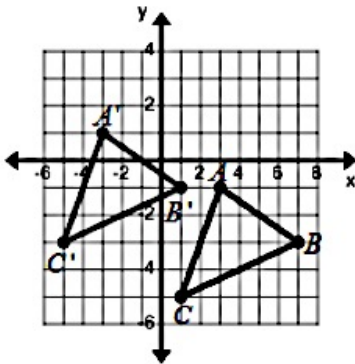
   a. D'_____ E'_____ F'_____

   b. Write the translation rule for the above $(x, y) \rightarrow$ _____

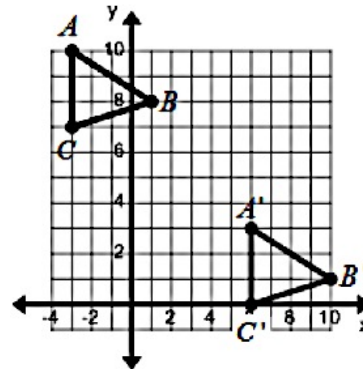6. Write the translation rule to move point to point on the grid.
   a. *B to B'*

   b. *B to B"*

   c. *B to B'''*

   d. Find the distance from B to B'''.

7. Write the translation rule for ABC →A'B'C'.

8. Write the translation rule for ABC →A'B'C':

9. **If $\triangle A'B'C'$ were the pre-image and $\triangle ABC$ were the image, write the translation rule for #7.**

10. **If $\triangle A'B'C'$ were the pre-image and $\triangle ABC$ were the image, write the translation rule for #8.**

11. Compare the two equations $f(x) = 5x - 15$ and $d(x) = 6x + 3$
    a. For $f(x)$, find the vertical **stretch** _____ vertical shift _____ horizontal shift _____ x-int _____
    b. For $d(x)$, find the vertical **stretch** _____ vertical shift _____ horizontal shift _____ x-int _____
    c. Factor the vertical stretch from $f(x)$: _____ and $d(x)$: _____
    d. Write the equation that shifts $f(x)$ 4 unit to the right _____

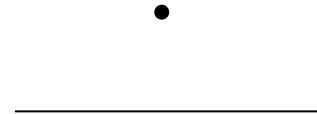Solve the following using row echelon reduction (#12) **AND** inverse matrices (#13).

12. $\begin{bmatrix} -3 & -6 & 12 \\ 6 & 5 & -3 \end{bmatrix}$

13. $\begin{bmatrix} -4 & -11 & 36 \\ 10 & 10 & -20 \end{bmatrix}$

14. Construct a line perpendicular to the segment below.
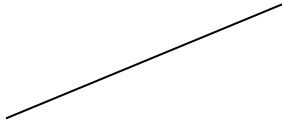
15. Construct a line perpendicular to the segment below through the given point.

Solve the following for the given variable.

16. $|-3 - 4n| + 2 = 5$

18. $3(-2x + 5) + 2 \le \frac{1}{2}(5x - 4)$

20. $\frac{4}{x - 8} = \frac{8}{x}$

19. $(p + 8)(p + 5) = 0$

21. Solve for t: $rt + st = mr - q$

17. $-2 + |-4r - 9| = 29$