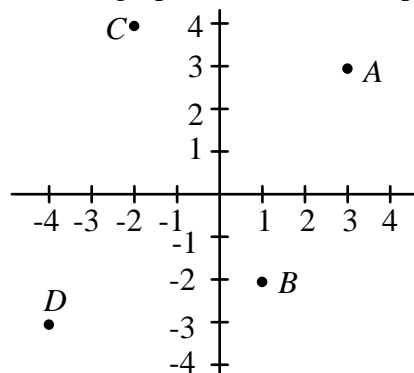


NAME: _____

P.I. G.G.54: Define, investigate, justify, and apply isometries in the plane (translations)

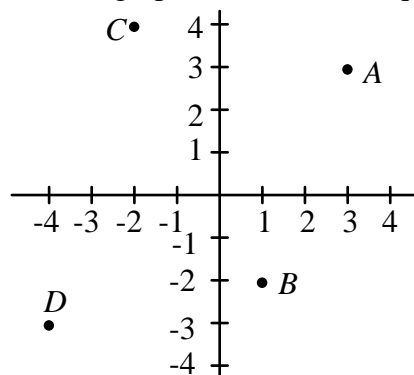
1. A figure is translated $\langle 3, -3 \rangle$. What translation would move the translation image back to its original position?
2. At the half-time show, a marching band marched in formation. The lead drummer started at a point with coordinates $(-4, 2)$ and moved 3 steps down, and 4 steps right. What are the coordinates of the drummer's final position?
3. How is the area of a square affected under the translation $\langle 4, -5 \rangle$?
4. Suppose a constellation of stars is plotted on a coordinate plane. The coordinates of the first star are $(4, 2)$. The second star is translated up 4 units. What are the new coordinates?
[A] $(4, 6)$ [B] $(0, 2)$
[C] $(4, -2)$ [D] $(8, 2)$
5. The vertices of a rectangle are $R(-5, -5)$, $S(-1, -5)$, $T(-1, 1)$ and $U(-5, 1)$. After translation, R' is the point $(3, 0)$. Find the translation and coordinates of U' .
[A] $\langle 8, -5 \rangle; (3, -4)$ [B] $\langle 5, -8 \rangle; (0, -7)$
[C] $\langle -5, 8 \rangle; (-10, 9)$
[D] $\langle 8, 5 \rangle; (3, 6)$
6. A computer artist must move a square in one corner of a digital image to a place 20 pixels to the right and 35 pixels down. The coordinates of the square pixels are $A(25, 50)$, $B(75, 50)$, $C(75, 100)$, $D(25, 100)$. Find the coordinates of the translated image.

7. Use the graph to answer each question.



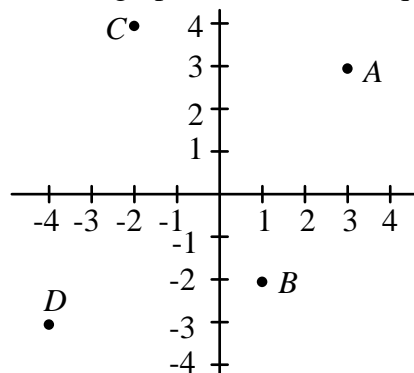
Point B above is translated up 4 units. What are its new coordinates?

8. Use the graph to answer each question.



Point D above is translated down 2 units and to the right 5 units. What are its new coordinates?

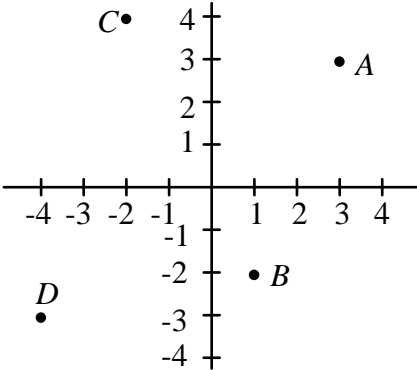
9. Use the graph to answer each question.



Translate Point A above left 3 units and down 2 units. Then translate the image, Point A' , to the left 4 units and down 2 units. What are the coordinates of the image of Point A' ?

NAME: _____

10. Use the graph to answer each question.



Point C above on the coordinate plane is actually the image of another point that had been translated 2 units to the right and 6 units up. What are the coordinates of this point?

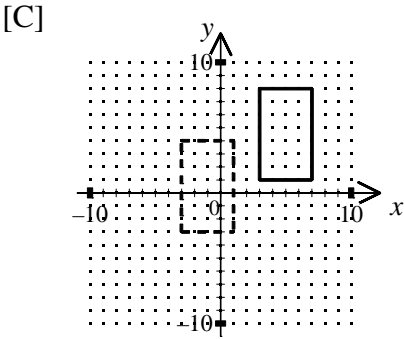
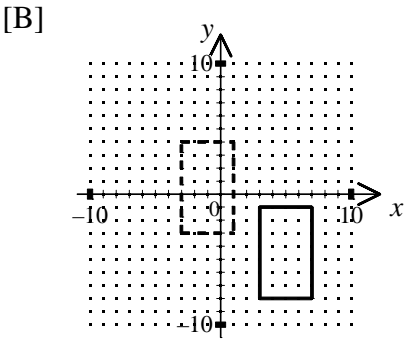
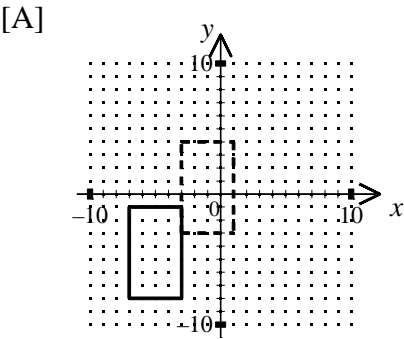
Use the table to answer each question.

Place	Longitude
Durban, South Africa	30° east
Greenwich, England	0°
Cleveland, Ohio	80° west

Source: National Geographic, [Our World](#)

- Longitude lines (also called meridians) measure how far east or west you are of the prime meridian in Greenwich, England. Longitudes range from 180° east through 180° west. The chart above gives the longitude for a few cities. If you moved Cleveland’s position 25° to the east, at what longitude would it be?
- Longitude lines (also called meridians) measure how far east or west you are of the prime meridian in Greenwich, England. Longitudes range from 180° east through 180° west. The chart above gives the longitude for a few cities. If you moved Durban’s position 40° to the west, at what meridian would it be?

13. Points $(-7, -8)$, $(-7, -1)$, $(-3, -1)$, and $(-3, -8)$ form a quadrilateral. Which graph displays the quadrilateral and its dotted translation 4 units to the right and 5 units up?



[D] none of these

- [1] $\langle -3, 3 \rangle$ _____
- [2] $(0, -1)$ _____
- [3] It is not changed. _____
- [4] A _____
- [5] D _____
- [6] $A'(45, 15), B'(95, 15), C'(95, 65), D'(45, 65)$ _____
- [7] $(1, 2)$ _____
- [8] $(1, -5)$ _____
- [9] $(-4, -1)$ _____
- [10] $(-4, -2)$ _____
- [11] 55° west _____
- [12] 10° west _____
- [13] A _____