

NAME Key

## Transformations on a Graph

A pre-image point is given. Use the directions to find the coordinates of the image point.

### Pre-Image Point and Directions

### Image Point

- |   |            |
|---|------------|
| 1. (3, -4) reflected over the y-axis        | ( -3, -4 ) |
| 2. (4, 5) reflected over the x-axis         | ( 4, -5 )  |
| 3. (-5, -7) reflected over the line $y = 4$ | ( -5, 15 ) |
| 4. (1, 2) translated left 1 and up 5        | ( 0, 7 )   |
| 5. (-4, -3) translated down 2               | ( -4, -5 ) |
| 6. (-5, 6) translated right 4 and down 5    | ( -1, 1 )  |
| 7. (2, 6) rotated $90^\circ$ CC             | ( -6, 2 )  |
| 8. (-3, 2) rotated $180^\circ$              | ( 3, -2 )  |
| 9. (-4, 5) rotated $270^\circ$ CC           | ( 5, 4 )   |
| 10. (5, 0) reflected over the y-axis        | ( -5, 0 )  |
| 11. (5, 0) rotated $270^\circ$ CC           | ( 0, -5 )  |
| 12. (5, 0) translated 3 right and 4 down    | ( 8, -4 )  |
| 13. (-2, 3) translated 8, right and 4 up    | ( 6, 7 )   |

# Read these carefully!

## Pre-Image Point and Directions

## Image Point

- |     |  |            |
|-----|--|------------|
| 14. | $(-7, 9)$ rotated $90^\circ$ CC            | $(-9, -7)$ |
| 15. | $(-7, 8)$ reflected over the line $x = -2$ | $(3, 8)$   |
| 16. | $(4, 2)$ reflected over the x-axis         | $(4, -2)$  |
| 17. | $(-3, 4)$ rotated $270^\circ$ CC           | $(4, 3)$   |
| 18. | $(2, -5)$ reflected over the line $y = -3$ | $(2, -1)$  |
| 19. | $(-1, 3)$ reflected over the y-axis        | $(1, 3)$   |
| 20. | $(9, 4)$ rotated $90^\circ$ CC             | $(-4, 9)$  |