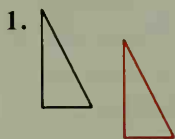


Chapter Test

State whether the transformation mapping the black triangle to the red triangle is a reflection, a translation, a glide reflection, or a rotation.



5. If $f(x) = \frac{1}{2}x + 3$, find the image and preimage of 4.

Give the coordinates of the image of point P under the transformation specified.

6. R_I

8. $D_{O, \frac{1}{2}}$

10. $\mathcal{R}_{O, 90} \circ \mathcal{R}_{O, 90}$

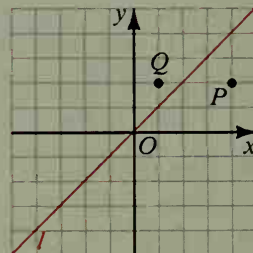
12. $R_I \circ D_{Q, -2}$

7. $\mathcal{R}_{O, -90}$

9. $H_O \circ R_x$

11. $D_{Q, \frac{1}{3}}$

13. $R_I \circ (R_y \circ R_x)$



Give the inverse of each transformation.

14. H_O

15. R_x

16. $D_{O, -2}$

T is the translation mapping $(4, 1)$ to $(6, 2)$. Find the coordinates of the image of the origin under each mapping.

17. T

18. T^3

19. T^{-1}

Classify each statement as true or false.

20. All regular polygons have rotational symmetry.

21. 180° rotational symmetry is the same as point symmetry.

22. All regular n -gons have exactly n symmetry lines.

23. A figure that has two intersecting lines of symmetry must have rotational symmetry.

24. a. Is a half-turn a transformation? Is it an isometry?

b. Name three properties that are invariant under a half-turn.

25. A line has slope 2. What is the slope of the image of the line under a:

a. reflection in the x -axis?

b. reflection in the line $y = x$?

c. dilation $D_{O, 3}$?