4.1–4.3 Quiz

Graph quadrilateral *ABCD* with vertices *A*(−4, 1), *B*(−3, 3), *C*(0, 1), and *D*(−2, 0) and its image after the translation. *(Section 4.1)*

1. $(x, y) \rightarrow (x + 4, y - 2)$

2. $(x, y) \rightarrow (x - 1, y - 5)$

3. $(x, y) \rightarrow (x + 3, y + 6)$

Graph the polygon with the given vertices and its image after a reflection in the given line. *(Section 4.2)*

4. $A(-5, 6)$, $B(-7, 8)$, $C(-3, 11)$; x-axis

5. $D(-5, -1)$, $E(-2, 1)$, $F(-1, -3)$; $y = x$

6. $J(-1, 4)$, $K(2, 5)$, $L(5, 2)$, $M(4, -1)$; $x = 3$

7. $P(2, -4)$, $Q(6, -1)$, $R(9, -4)$, $S(6, -6)$; $y = -2$

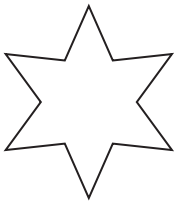
Graph $\triangle ABC$ with vertices *A*(2, −1), *B*(5, 2), and *C*(8, −2) and its image after the glide reflection. *(Section 4.2)*

8. **Translation:** $(x, y) \rightarrow (x, y + 6)$
Reflection: in the y-axis

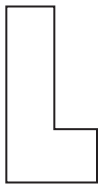
9. **Translation:** $(x, y) \rightarrow (x - 9, y)$
Reflection: in the line $y = 1$

Determine the number of lines of symmetry for the figure. *(Section 4.2)*

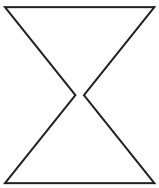
10.



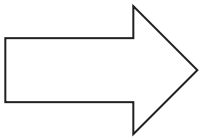
11.



12.

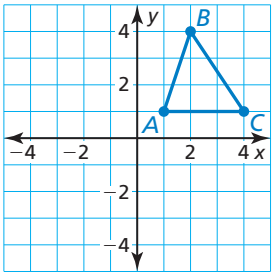


13.

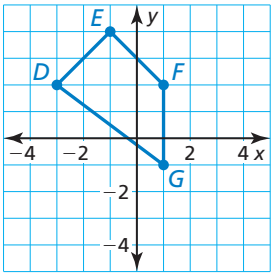


Graph the polygon and its image after a rotation of the given number of degrees about the origin. *(Section 4.3)*

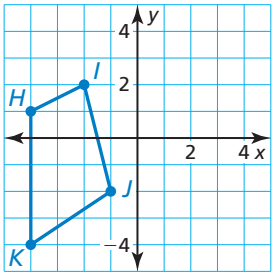
14. 90°



15. 270°

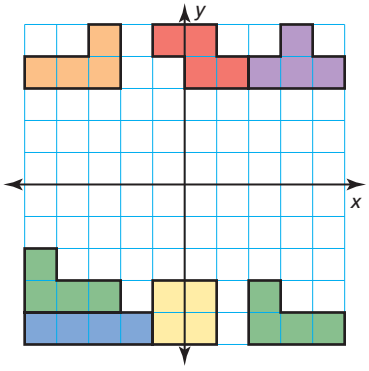


16. 180°



Graph $\triangle LMN$ with vertices *L*(−3, −2), *M*(−1, 1), and *N*(2, −3) and its image after the composition. *(Sections 4.1–4.3)*

17. **Translation:** $(x, y) \rightarrow (x - 4, y + 3)$
Rotation: 180° about the origin

18. **Rotation:** 90° about the origin
Reflection: in the y-axis

19. The figure shows a game in which the object is to create solid rows using the pieces given. Using only translations and rotations, describe the transformations for each piece at the top that will form two solid rows at the bottom. *(Section 4.1 and Section 4.3)*