Chapter 14

Indicate the best answer by writing the appropriate letter.

1. A regular hexagon does *not* have which symmetry?
   a. line **b.** point **c.** 30° rotational **d.** 120° rotational

2. What is the image of the point (2, 3) by reflection in the x-axis?
   a. (3, 2) **b.** (−2, 3) **c.** (2, −3) **d.** (−2, −3)

3. $T:(x, y) \rightarrow (x, y - 2)$. What is the preimage of (3, 5)?
   a. (5, 7) **b.** (3, 7) **c.** (3, 3) **d.** (5, 3)

4. If O is the point (0, 0), what is the image of (3, 6) by $D_{O,\frac{1}{3}}$?
   a. (9, 18) **b.** (2, 4) **c.** (1, 2) **d.** (−1, −2)

5. What is the image of (−1, 3) by a half-turn about (1, 2)?
   a. (3, 1) **b.** (1, −3) **c.** (−1, −2) **d.** (3, −1)

6. $T:(x, y) \rightarrow (x, y - 2)$. What is the image of (5, 3) by T^{-1}?
   a. (3, 3) **b.** (5, 1) **c.** (3, 5) **d.** (5, 5)

7. Isometry $S:\square ABCD \rightarrow \square JKLM$. Which statement *must* be true?
   a. $\angle DAB \cong \angle JKL$ **b.** $AC = JL$
   c. $S:C \rightarrow M$ **d.** $CD = MJ$

8. What is the line of reflection for a transformation that maps (−2, 1) to (2, 1)?
   a. the x-axis **b.** the line $y = x$
   c. the y-axis **d.** the origin

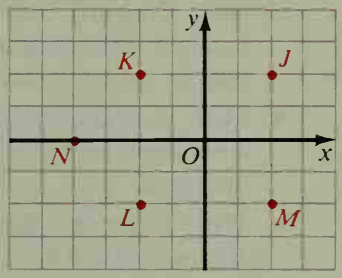
9. How many lines of symmetry does a rhombus with a 60° angle have?
   a. none **b.** one **c.** two **d.** four

10. If k is the line $y = x$, find the image of J by $R_k \circ R_y$.
    a. J **b.** K **c.** L **d.** M

11. T is a translation that maps K to N. What is the image of J under T?
    a. K **b.** O **c.** N **d.** L

12. What is the image of J under $R_x \circ H_O$?
    a. J **b.** K **c.** L **d.** M

13. What is the image of $\triangle LMJ$ by $\mathcal{R}_{O,90}$?
    a. $\triangle JKL$ **b.** $\triangle KLM$ **c.** $\triangle LMJ$ **d.** $\triangle MJK$



Exs. 10–13

14. Which mapping is *not* an isometry?
    a. glide reflection **b.** translation
    c. dilation **d.** the identity transformation

15. Which of the following is *not* invariant under a glide reflection?
    a. angle measure **b.** orientation of points
    c. parallelism of lines **d.** areas of polygons