

Name _____

4-7B Lesson Master**Questions on SPUR Objectives**

See Student Edition pages 293–297 for objectives.

PROPERTIES Objective E

1. Show that multiplication of 2×2 matrices is not commutative.

2. a. Write the 2×2 identity matrix I .

- b. Show that $I \cdot M = M \cdot I$ for all 2×2 matrices M .

3. Name two other properties of 2×2 matrices that are shared by multiplication of real numbers.

PROPERTIES Objective G

4. Suppose T_1 has matrix $\begin{bmatrix} 4 & 0 \\ 0 & 4 \end{bmatrix}$ and T_2 has matrix $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$.

- a. What is the matrix for $T_2 \circ T_1$?

- b. Explain what happens to a figure under $T_2 \circ T_1$.

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Matching In 5–10, a point and its image under composites of transformations are graphed. a. Match the composite to a graph. b. Give a matrix for the composite.

5. $r_x \circ r_x$

a. _____ b. _____

6. $r_x \circ r_y$

a. _____ b. _____

7. $I \circ r_x$

a. _____ b. _____

8. $S_2 \circ r_y$

a. _____ b. _____

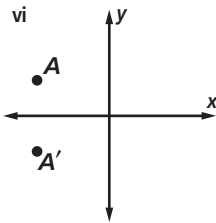
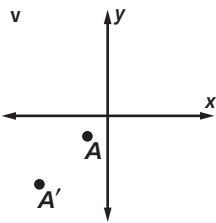
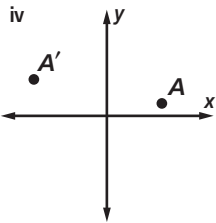
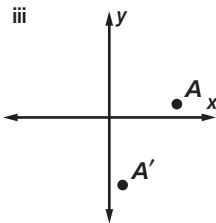
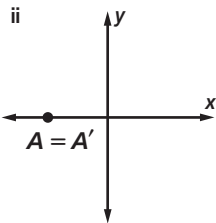
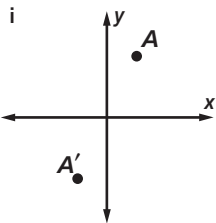
9. $r_x \circ r_{y=x}$

a. _____ b. _____

10. $S_2 \circ S_{2.5}$

a. _____ b. _____

Answer Page

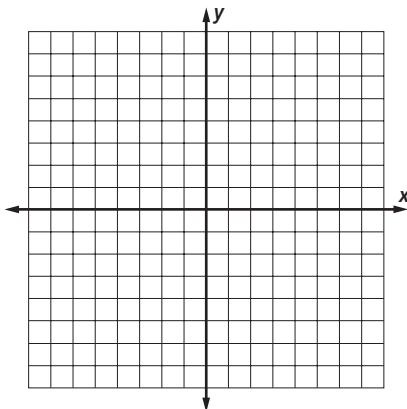


REPRESENTATIONS Objective K

11. A polygon is represented by the matrix

$$\begin{bmatrix} 1 & 4 & 4 & 0 \\ -1 & -2 & -5 & -3 \end{bmatrix}$$

Below graph the polygon and its image under $r_x \circ r_y$.



12. A polygon is represented by the matrix

$$\begin{bmatrix} -4 & -2 & -4 \\ 2 & 2 & -2 \end{bmatrix}$$

Below graph the polygon and its image under $r_y = x \circ S_{\frac{1}{2}}$.

