

12.4 Compositions of Transformations

Identify each mapping. Specifically describe each transformation by indicating the center and angle of rotation, reflection line, and/or translation vector.

Example: $ABC \rightarrow PQM$ is glide reflection with a translation $\langle 11, 0 \rangle$ and a reflection over the line $x = 4$.

38. $\triangle ABC \rightarrow \triangle EDC$

39. $\triangle EDC \rightarrow \triangle PQM$

40. $\triangle MNJ \rightarrow \triangle EDC$

41. $\triangle HIF \rightarrow \triangle HGF$

42. $\triangle PQM \rightarrow \triangle JLM$

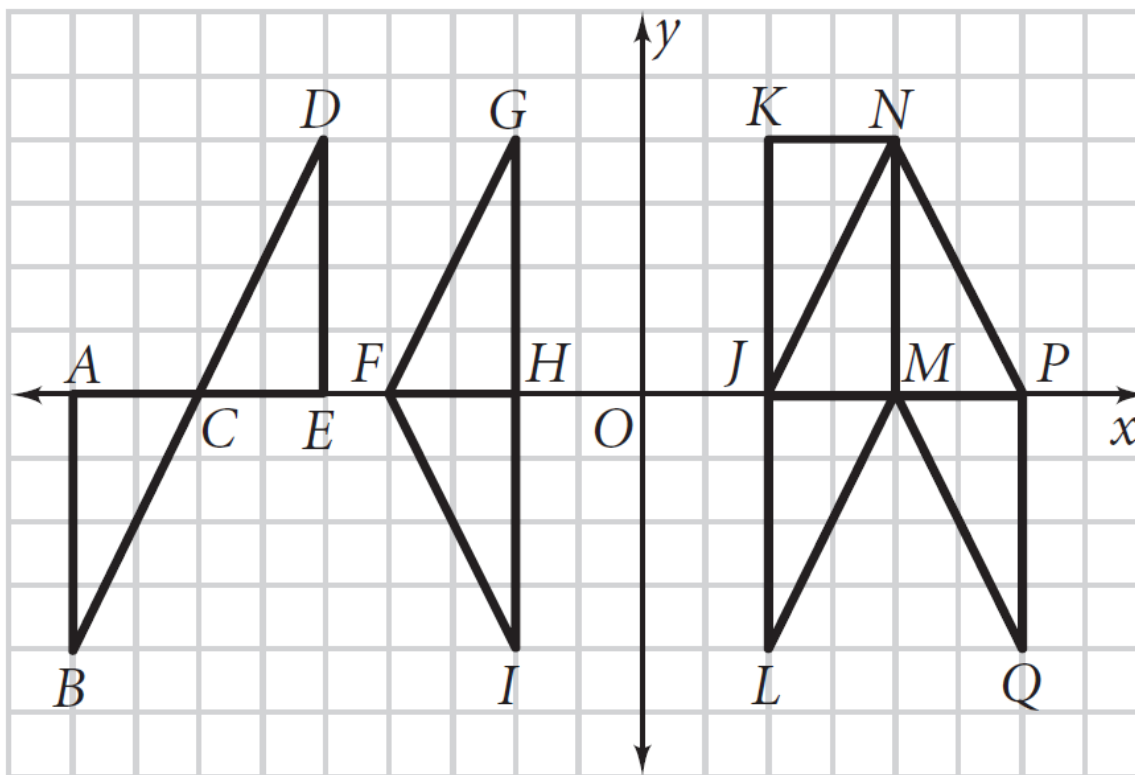
43. $\triangle MNP \rightarrow \triangle EDC$

44. $\triangle JLM \rightarrow \triangle MNJ$

45. $\triangle PQM \rightarrow \triangle KJN$

46. $\triangle KJN \rightarrow \triangle ABC$

47. $\triangle HGF \rightarrow \triangle KJN$

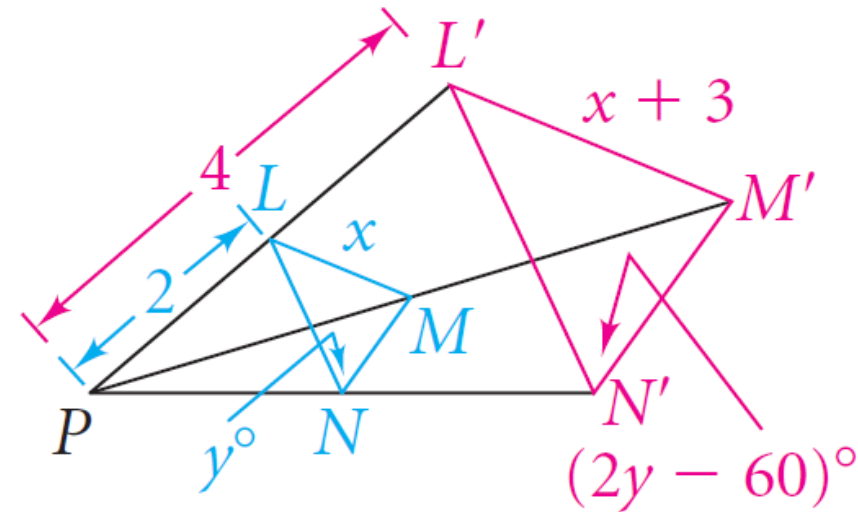


12.7 Dilations (continues on next slide)

- 46. Error Analysis** Brendan says that when a rectangle with length 6 cm and width 4 cm is dilated by a scale factor of 2, the perimeter and area of the rectangle are doubled. Explain what is incorrect about Brendan's statement.

The diagram at the right shows $\triangle LMN$ and its image $\triangle L'M'N'$ for a dilation with center P .

- 47. Algebra** Find the values of x and y .
- 48.** How does the area of $\triangle L'M'N'$ compare with the area of $\triangle LMN$?



Problems continue on next slide ->

12.7 Dilations (continued)

Write *true* or *false* for Exercises 57–61. Explain your answers.

57. A dilation is an isometry.

58. A dilation changes orientation.

59. A dilation with a scale factor greater than 1 is a reduction.

60. For a dilation, corresponding angles of the image and preimage are congruent.

61. A dilation image cannot have any points in common with its preimage.

62. A flashlight projects an image of rectangle $ABCD$ on a wall so that each vertex of $ABCD$ is 3 ft away from the corresponding vertex of $A'B'C'D'$. The length of \overline{AB} is 3 in. The length of $\overline{A'B'}$ is 1 ft. How far from each vertex of $ABCD$ is the light?

