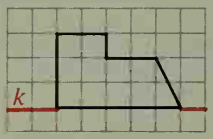
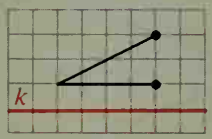
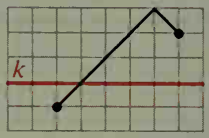
Written Exercises

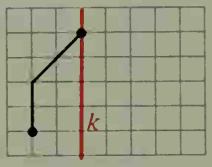
Copy each figure on graph paper. Then draw the image by reflection in line k.

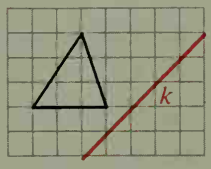
A

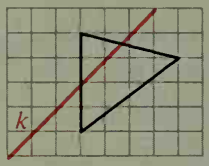
1. 

2. 

3. 

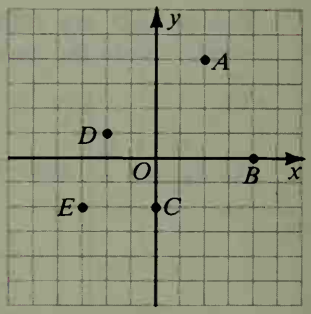
4. 

5. 

6. 

Write the coordinates of the image of each point by reflection in (a) the x-axis, (b) the y-axis, and (c) the line $y = x$. (*Hint*: Refer to the Example on page 578.)

7. A 8. B 9. C
10. D 11. E 12. O



Exs. 7–12

13. When the word MOM is reflected in a vertical line, the image is still MOM. Can you think of other words that are unchanged when reflected in a vertical line?

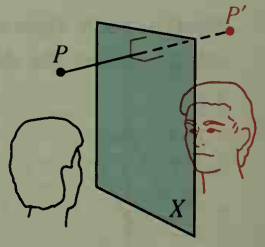
14. When the word HIDE is reflected in a horizontal line, the image is still HIDE. Can you think of other words that are unchanged when reflected in a horizontal line?

B

15. Draw a triangle and a line m such that R_m maps the triangle to itself. What kind of triangle did you use?

16. Draw a pentagon and a line n such that R_n maps the pentagon to itself.

17. The sketch illustrates a *reflection in plane X*. Write a definition of this reflection similar to the definition of a reflection in line m on page 577.



Ex. 17

In Exercises 18–20, refer to the diagrams on page 578. Given the reflection $R_m: \overline{PQ} \rightarrow \overline{P'Q'}$, write the key steps of a proof that $PQ = P'Q'$ for each case.

18. Case 2 19. Case 3 20. Case 4

21. Draw a line t and a point A not on t. Then use a straightedge and compass to construct the image of A under R_t.

22. Draw any two points B and B'. Then use a straightedge and compass to construct the line of reflection j so that $R_j(B) = B'$.