

2.2 Exercises



Vocabulary and Concept Check

- VOCABULARY** Which figure is the image?
- VOCABULARY** How do you translate a figure in a coordinate plane?
- WRITING** Can you translate the letters in the word TOKYO to form the word KYOTO? Explain.

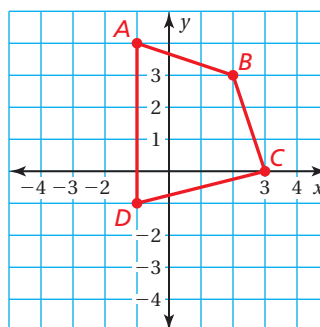
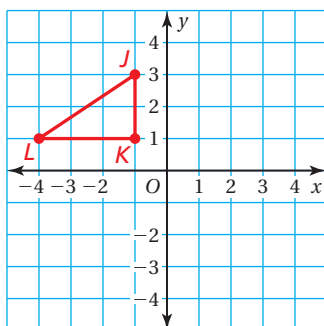


Practice and Problem Solving

Tell whether the blue figure is a translation of the red figure.

- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

10. Translate the triangle 4 units right and 3 units down. What are the coordinates of the image?
11. Translate the figure 2 units left and 4 units down. What are the coordinates of the image?



The vertices of a triangle are $L(0, 1)$, $M(1, -2)$, and $N(-2, 1)$. Draw the figure and its image after the translation.

12. 1 unit left and 6 units up
13. 5 units right
14. $(x + 2, y + 3)$
15. $(x - 3, y - 4)$
16. **ICONS** You can click and drag an icon on a computer screen. Is this an example of a translation? Explain.

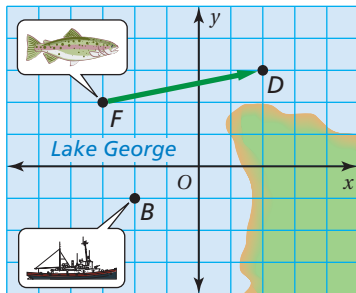
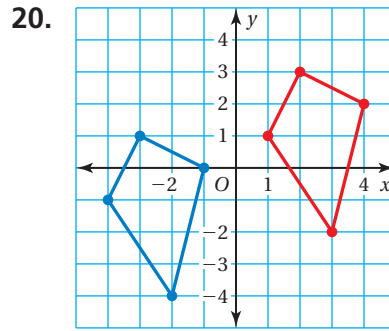
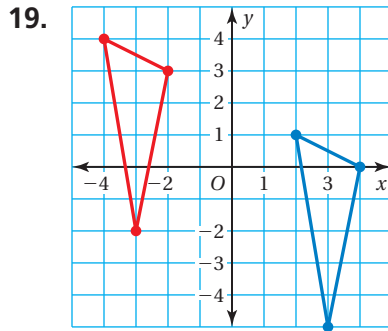


Describe the translation of the point to its image.

17. $(3, -2) \rightarrow (1, 0)$

18. $(-8, -4) \rightarrow (-3, 5)$

Describe the translation from the red figure to the blue figure.



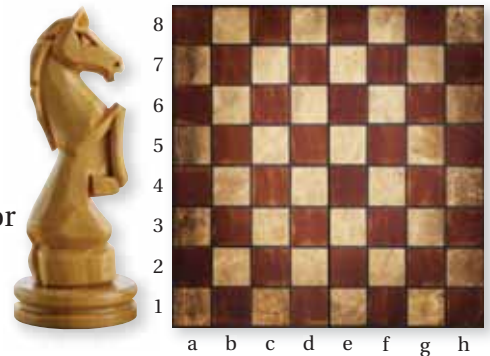
21. **FISHING** A school of fish translates from point F to point D .

- Describe the translation of the school of fish.
- Can the fishing boat make the same translation? Explain.
- Describe a translation the fishing boat could make to get to point D .

22. **REASONING** The vertices of a triangle are $A(0, -3)$, $B(2, -1)$, and $C(3, -3)$. You translate the triangle 5 units right and 2 units down. Then you translate the image 3 units left and 8 units down. Is the original triangle congruent to the final image? If so, give two ways to show that they are congruent.

23. **Problem Solving** In chess, a knight can move only in an L-shaped pattern:
- two vertical squares, then one horizontal square;
 - two horizontal squares, then one vertical square;
 - one vertical square, then two horizontal squares; or
 - one horizontal square, then two vertical squares.

Write a series of translations to move the knight from g8 to g5.



Fair Game Review what you learned in previous grades & lessons

Tell whether you can fold the figure in half so that one side matches the other.

(Skills Review Handbook)



28. **MULTIPLE CHOICE** You put \$550 in an account that earns 4.4% simple interest per year. How much interest do you earn in 6 months? (Skills Review Handbook)

(A) \$1.21

(B) \$12.10

(C) \$121.00

(D) \$145.20