

LESSON
9.1**Practice**

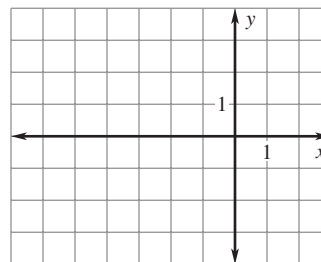
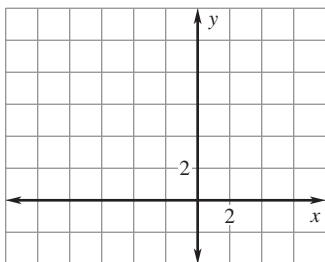
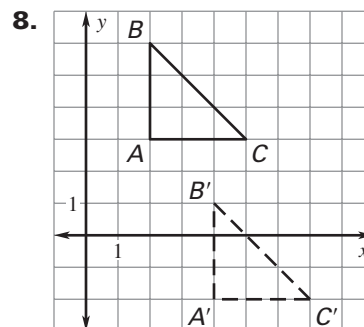
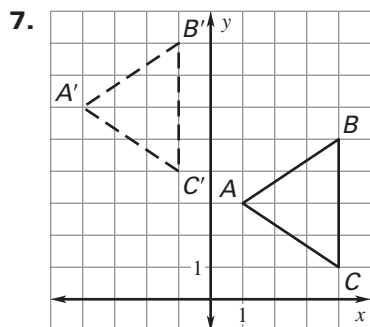
For use with pages 572–579

Use the translation $(x, y) \rightarrow (x + 6, y - 3)$.

1. What is the image of $A(3, 2)$?
2. What is the image of $B(-4, 1)$?
3. What is the preimage of $C'(2, -7)$?
4. What is the preimage of $D'(-3, -2)$?

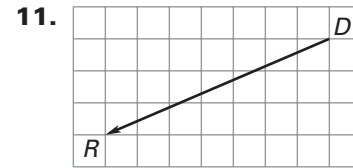
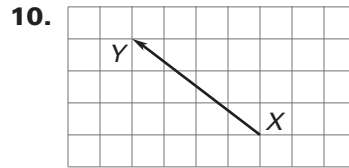
The vertices of $\triangle ABC$ are $A(-1, 1)$, $B(4, -1)$, and $C(2, 4)$. Graph the image of the triangle using prime notation.

5. $(x, y) \rightarrow (x - 3, y + 5)$
6. $(x, y) \rightarrow (x - 4, y - 2)$

 **$\triangle A'B'C'$ is the image of $\triangle ABC$ after a translation. Write a rule for the translation. Then verify that the translation is an isometry.**

LESSON
9.1
Practice *continued*
 For use with pages 572–579

Name the vector and write its component form.



Use the point $P(5, -2)$. Find the component form of the vector that describes the translation to P' .

12. $P'(2, 0)$

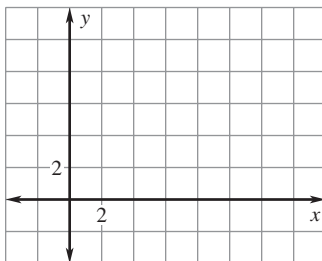
13. $P'(8, -3)$

14. $P'(0, 4)$

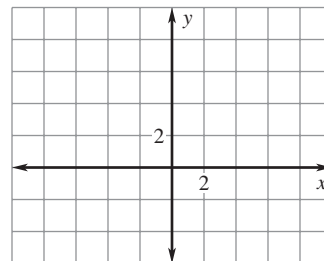
15. $P'(-5, -4)$

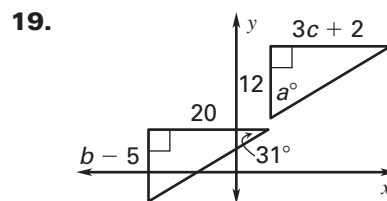
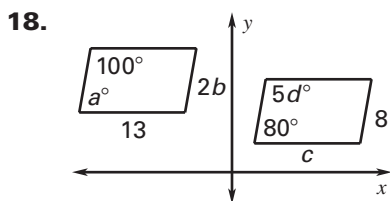
The vertices of $\triangle ABC$ are $A(1, 2)$, $B(2, 6)$, and $C(3, 1)$. Translate $\triangle ABC$ using the given vector. Graph $\triangle ABC$ and its image.

16. $\langle 8, 2 \rangle$

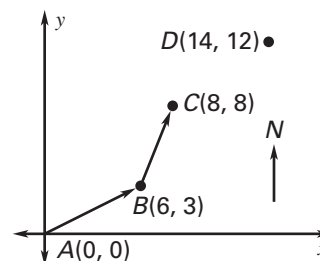


17. $\langle -7, -3 \rangle$



LESSON
9.1**Practice** *continued*
For use with pages 572–579**Find the value of each variable in the translation.**

20. **Navigation** A hot air balloon is flying from point A to point D . After the balloon travels 6 miles east and 3 miles north, the wind direction changes at point B . The balloon travels to point C as shown in the diagram.



- Write the component form for \overrightarrow{AB} and \overrightarrow{BC} .
- The wind direction changes and the balloon travels from point C to point D . Write the component form for \overrightarrow{CD} .
- What is the total distance the balloon travels?
- Suppose the balloon went straight from A to D . Write the component form of the vector that describes this path. What is this distance?