Name _____   Date _____

Practice C

For use with pages 572–579

Use the translation (x, *y*) → (x - 5, *y* + 8).

1. What is the image of *B*(4, 2)?

2. What is the image of *D*(–1, 5)?

3. What is the preimage of *F'*(–3, –4)?

4. What is the preimage *of H'*(7, –5)?

5. What is the image of *J*(0, 2)?

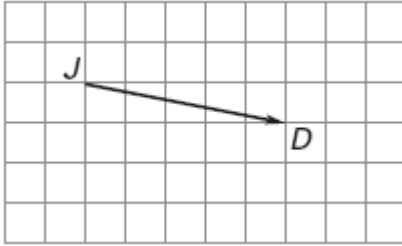6. What is the preimage of *K'*(–4, 6)?

Write a rule for the translation.

7. 1 unit to the left and 1 unit up

8. 3 units down

9. 7 units to the left and 4 units down

10. 10 units right and 8 units up

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

11.

12.
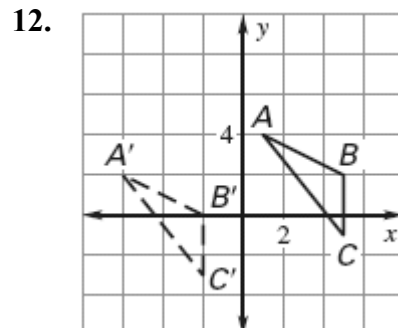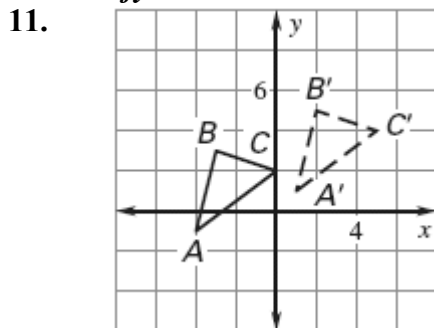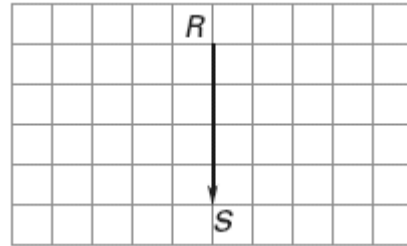
Name the vector and write its component form.

13.

14.

ΔABC with vertices A(–2, 4), B(6. 2), and C(3, –2) is translated to ΔA'B'C'. Determine the translation using a vector in component form, and determine the coordinates of the remaining vertices.

15. $A'(-5,5)$

16. $B'(2, -5)$

17. $C'(-4,-5)$

18. $B'(8, 6)$

In Exercises 20 and 21, let P' and Q' be the images of P and Q, respectively, after an isometry. Determine whether the statement is *true* or *false*. If it is true, give a proof using coordinate geometry. If it is false, give a counterexample.

19. If the isometry is the translation $(x, y) \rightarrow (x + h, y + k)$, where h and k are constants, then $\overline{PP'}$ and $\overline{QQ'}$ are congruent and parallel (or collinear).

20. If $\overline{PP'}$ and $\overline{QQ'}$ are congruent and parallel, then the isometry is a translation.