Name _____ Date _____

Challenge Practice
For use with the lesson "Write Equations of Parallel and Perpendicular Lines"

In Exercises 1–4, find the slope of the line perpendicular to the line through the given points.

1. $(1, 3), (2, y), y \neq 3$

2. $(1, 3), (x, y), y \neq 3$

3. $(x, 3), (x, y), y \neq 3$

4. $(a, b), (x, y), y \neq b$

In Exercises 5–8, find an equation of the line in point-slope form that is parallel to the line through the given points and passes through the indicated point. Indicate any required restrictions on the values of the constants used in the problem.

5. $(a, b), (c, d)$, passes through the point (p, q)

6. $(a, b), (b, a)$, passes through the point (p, q)

7. $(-a, b), (-b, a)$, passes through the point $(0, b)$

8. $(a, -b), (b, -a)$, passes through the point $(-b, 0)$

In Exercises 9–12, find an equation of the line in point-slope form that is perpendicular to the line through the given points and passes through the indicated point. Indicate any required restrictions on the values of the constants used in the problem.

9. $(a, b), (c, d)$, passes through the point (p, q)

10. $(a, b), (b, a)$, passes through the point (p, q)

11. $(-a, b), (-b, a)$, passes through the point $(0, b)$

12. $(a, b), (b, a)$, passes through the point $(-b, 0)$