

8-3

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

**Skills Practice**  
Tests for Parallelograms

Determine whether each quadrilateral is a parallelogram. Justify your answer.



Yes; a pair of opposite sides is parallel and congruent.



Yes; both pairs of opposite angles are congruent.



No; none of the tests for parallelograms is fulfilled.



Yes; both pairs of opposite sides are congruent.

**COORDINATE GEOMETRY** Determine whether a figure with the given vertices is a parallelogram. Use the method indicated.

5.  $P(0, 0)$ ,  $Q(3, 4)$ ,  $S(7, 4)$ ,  $T(4, 0)$ ; Slope Formula

yes

6.  $S(-2, 1)$ ,  $R(1, 3)$ ,  $T(2, 0)$ ,  $Z(-1, -2)$ ; Distance and Slope Formula

yes

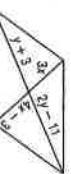
7.  $W(2, 5)$ ,  $R(3, 3)$ ,  $Y(-2, -3)$ ,  $N(-3, 1)$ ; Midpoint Formula

no

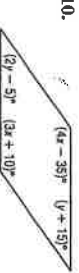
**ALGEBRA** Find  $x$  and  $y$  so that each quadrilateral is a parallelogram.



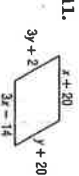
$x = 24$ ,  $y = 19$



$x = 3$ ,  $y = 14$



$x = 45$ ,  $y = 20$



$x = 17$ ,  $y = 9$

8-3

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

**Practice (Average)**  
Tests for Parallelograms

Determine whether each quadrilateral is a parallelogram. Justify your answer.



Yes; the diagonals bisect each other.



No; none of the tests for parallelograms is fulfilled.



Yes; both pairs of opposite angles are congruent.



No; none of the tests for parallelograms is fulfilled.

**COORDINATE GEOMETRY** Determine whether a figure with the given vertices is a parallelogram. Use the method indicated.

5.  $P(-5, 1)$ ,  $S(-2, 2)$ ,  $R(-1, -3)$ ,  $T(2, -2)$ ; Slope Formula

no

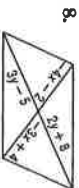
6.  $R(-2, 5)$ ,  $O(1, 3)$ ,  $M(-3, -4)$ ,  $Y(-6, -2)$ ; Distance and Slope Formula

yes

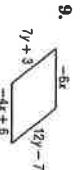
**ALGEBRA** Find  $x$  and  $y$  so that each quadrilateral is a parallelogram.



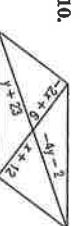
$x = 20$ ,  $y = 12$



$x = -6$ ,  $y = 13$



$x = -3$ ,  $y = 2$



$x = -2$ ,  $y = -5$

**11. TILE DESIGN** The pattern shown in the figure is to consist of congruent parallelograms. How can the designer be certain that the shapes are parallelograms?

Sample answer: Confirm that both pairs of opposite  $\angle$ s are  $\cong$ .

