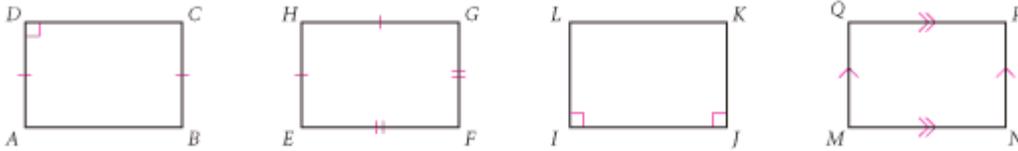




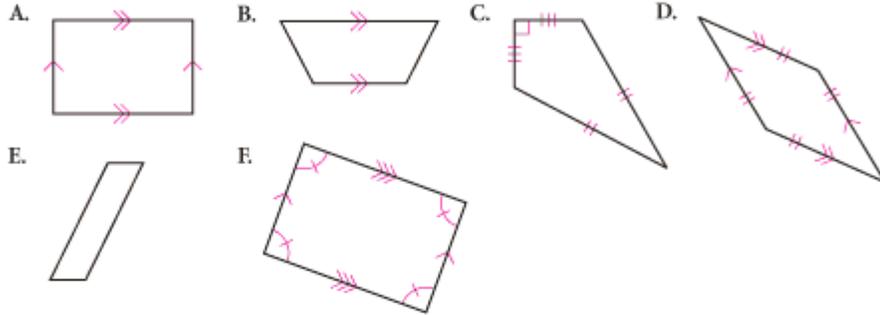
EXERCISES

1. Based on the marks, what can you assume to be true in each figure?



For Exercises 2–6, match the term on the left with its figure on the right.

2. Trapezoid
3. Rhombus
4. Rectangle
5. Kite
6. Parallelogram



For Exercises 7–10, sketch and label the figure. Mark the figures.

7. Trapezoid $ZOID$ with $ZO \parallel ID$
8. Kite $BENF$ with $BE = EN$
9. Rhombus $EQUL$ with diagonals \overline{EU} and \overline{QL} intersecting at A
10. Rectangle $RGHT$ with diagonals \overline{RH} and \overline{GT} intersecting at I
11. Draw a hexagon with exactly two outside diagonals.
12. Draw a regular quadrilateral. What is another name for this shape?
13. Find the other two vertices of a square with one vertex $(0, 0)$ and another vertex $(4, 2)$. Can you find another answer?

Architecture

CONNECTION

Quadrilaterals are used in the architecture of many cultures for both practical purposes and aesthetic appeal. The Acoma Pueblo Dwellings in New Mexico, the Chichén Itzá pyramid in Mexico, and the spiral staircase in an apartment house designed by Austrian architect and artist Friedensreich Hundertwasser (1928–2000) all use quadrilateral-based designs for constructing climbing structures and enhancing overall attractiveness.

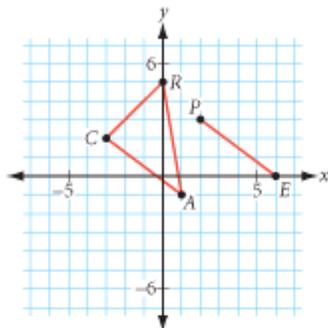


14. A rectangle with perimeter 198 cm is divided into five congruent rectangles, as shown in the diagram at right. What is the perimeter of one of the five congruent rectangles? 

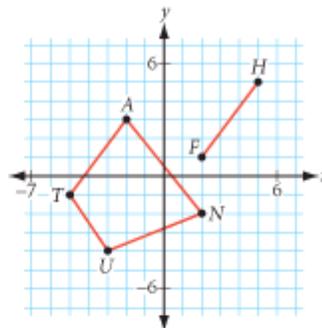


For Exercises 15–18, copy the given polygon and segment onto graph paper. Give the coordinates of the missing points.

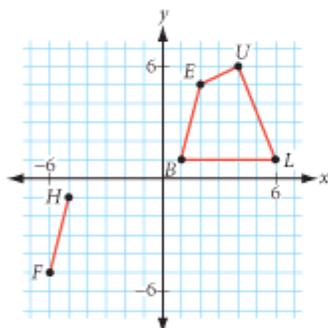
15. $\triangle CAR \cong \triangle PET$



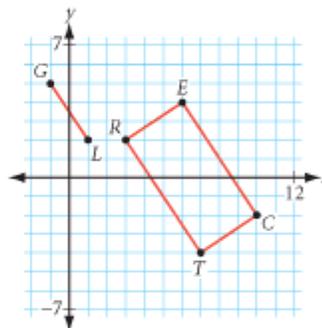
16. $TUNA \cong FISH$



17. $BLUE \cong FISH$



18. $RECT \cong ANGL$



19. Draw and cut out two congruent acute scalene triangles.
- Arrange them into a kite. Sketch the result and mark all congruent sides.
 - Arrange them into a parallelogram. Sketch the result and mark all congruent sides.
20. Draw and cut out two congruent obtuse isosceles triangles. Which special quadrilaterals can you create with these two congruent triangles? Explain.
21. Imagine using two congruent triangles to create a special quadrilateral, as you did in the last two exercises.
- What type of triangles do you need to form a rectangle? Explain.
 - What type of triangles do you need to form a square? Explain.



The repeating pattern of squares and triangles creates a geometric tree in this quilt design by Diane Venters. What other polygons can you find in this quilt?