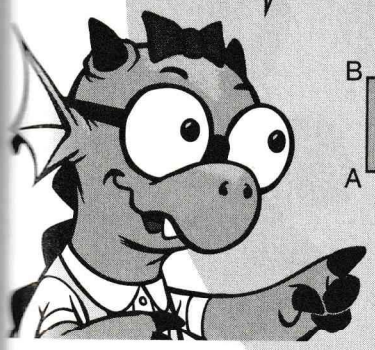
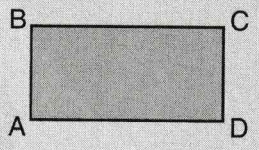


**Quadrilaterals** have four sides and four angles.

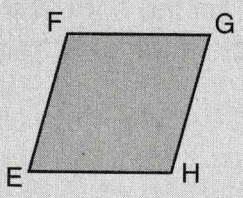
A quadrilateral with four right angles is called a ***rectangle.***

A quadrilateral with four equal side lengths is called a ***rhombus.***

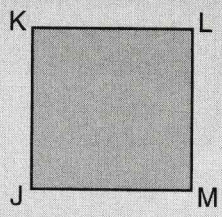
A quadrilateral that is both a rectangle and a rhombus is called a ***square.***




ABCD is a rectangle.




EFGH is a rhombus.

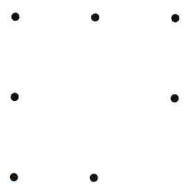



JKLM is a rectangle, a rhombus, and a square.

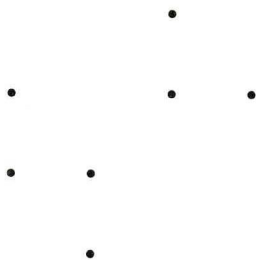
When naming polygons with four or more sides, the corners must be listed in order around the shape. For example, rectangle ABCD above could be named BCDA, but ***not*** ABDC.

## PRACTICE

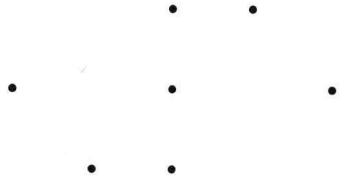
**39.** Draw a square that has its corners on four of the points below.



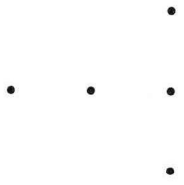
**40.** Draw a rectangle that has its corners on four of the points below.



**41.** Draw a rhombus that has its corners on four of the points below.



**42.** ★ Draw a quadrilateral that has its corners on four of the points below.



**PRACTICE**

Draw a line to connect each of the descriptions below to one of the drawings on the right. If a shape is impossible, connect it to the circle marked "Impossible".

**43.** A rectangle that is not a square.

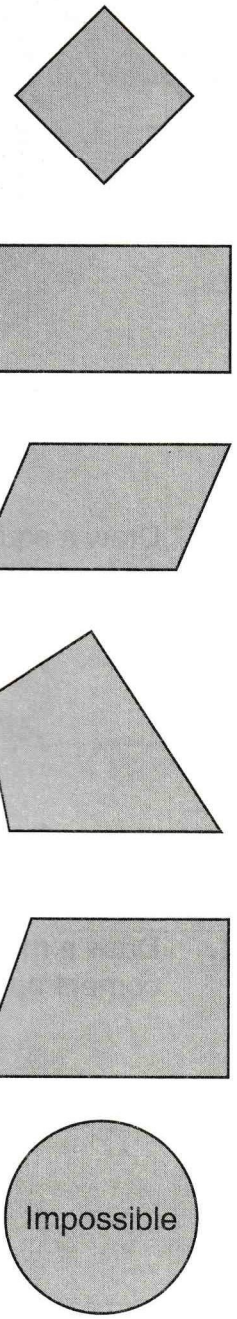
**44.** A quadrilateral with exactly one right angle.

**45.** A rhombus.

**46.** A quadrilateral with exactly two right angles.

**47.** A quadrilateral that has four acute angles.

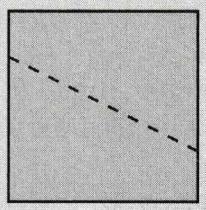
**48.** A quadrilateral that can be cut into two acute triangles.



**EXAMPLE**

True or False:
If you cut a square into two identical pieces, the pieces will always be triangles or rectangles.

This statement is **false**.
It is possible to cut a square into two identical pieces that are not triangles or rectangles.



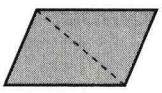

**PRACTICE**

Mark each statement below either true or false. For each false answer, draw a shape that shows that the statement is false.

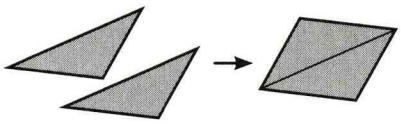
**49.** **All** squares are rectangles. **49.** _____

**50.** **All** rhombuses are squares. **50.** _____

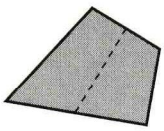
**51.** **Every** quadrilateral can be cut between two corners into two identical triangles. **51.** _____



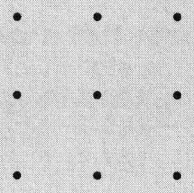
**52.** **Any** two identical triangles can be attached to make a quadrilateral. **52.** _____



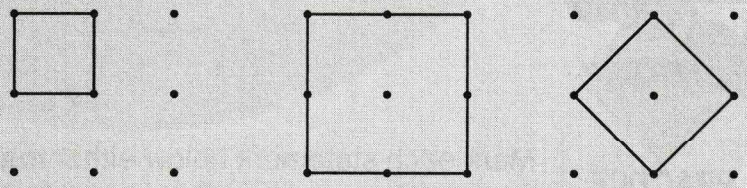
**53.** **Any** quadrilateral can be split into two smaller quadrilaterals by a straight line from the middle of one side to the middle of another side. **53.** _____




**EXAMPLE** | How many different squares have all four corners on points in the grid below?



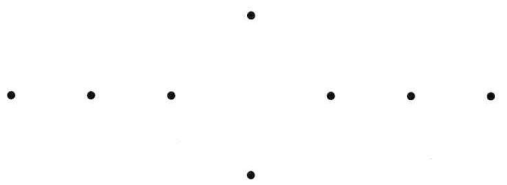
You can make these squares:
four small squares, one big square, and one medium square.



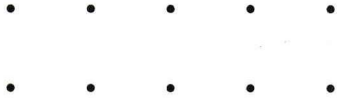
There are a total of $4+1+1=\mathbf{6}$ squares.
Watch out for tricky shapes in the problems below.

**PRACTICE** | Answer each shape-counting question below.

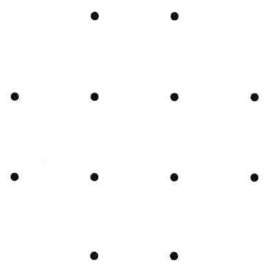
**54.** How many different ***rhombuses*** have all four corners on points in the grid below? **54.** _____



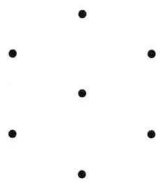
**55.** How many different ***rectangles*** have all four corners on points in the grid below? **55.** _____



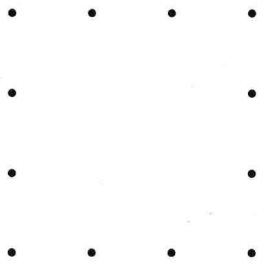
**56.** ★ How many different ***squares*** have all four corners on points in the grid below? **56.** _____



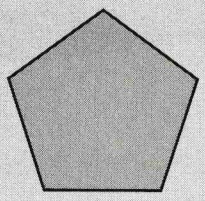
**57.** ★ How many different ***rhombuses*** have all four corners on points in the grid below? **57.** _____



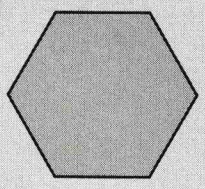
**58.** ★ ★ How many different ***rectangles*** have all four corners on points in the grid below? **58.** _____



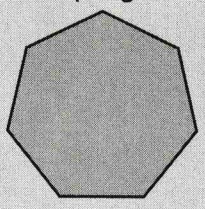

Five sides: Pentagon



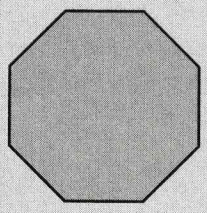
Six sides: Hexagon



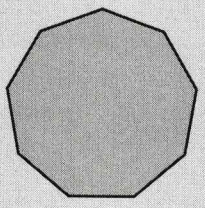
Seven sides: Heptagon



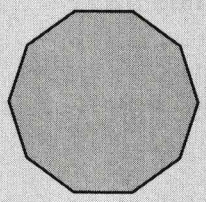
Eight sides: Octagon



Nine sides: Nonagon



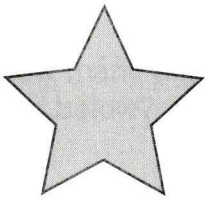
Ten sides: Decagon



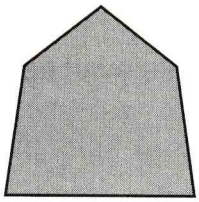
The shapes above are all ***regular***. A shape is regular if all its sides and angles are the same. Not all polygons are regular.

**PRACTICE** Label each shape below as a pentagon, hexagon, heptagon, octagon, nonagon, or decagon.

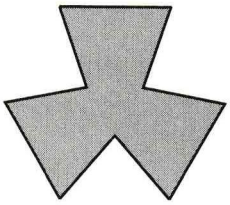
**59.**



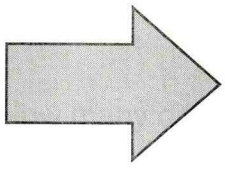
**60.**



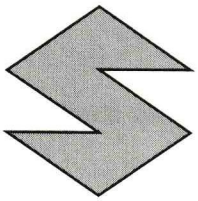
**61.**



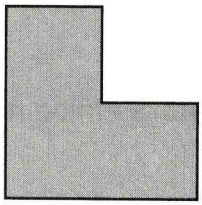
**62.**



**63.**



**64.**



**59.** _____

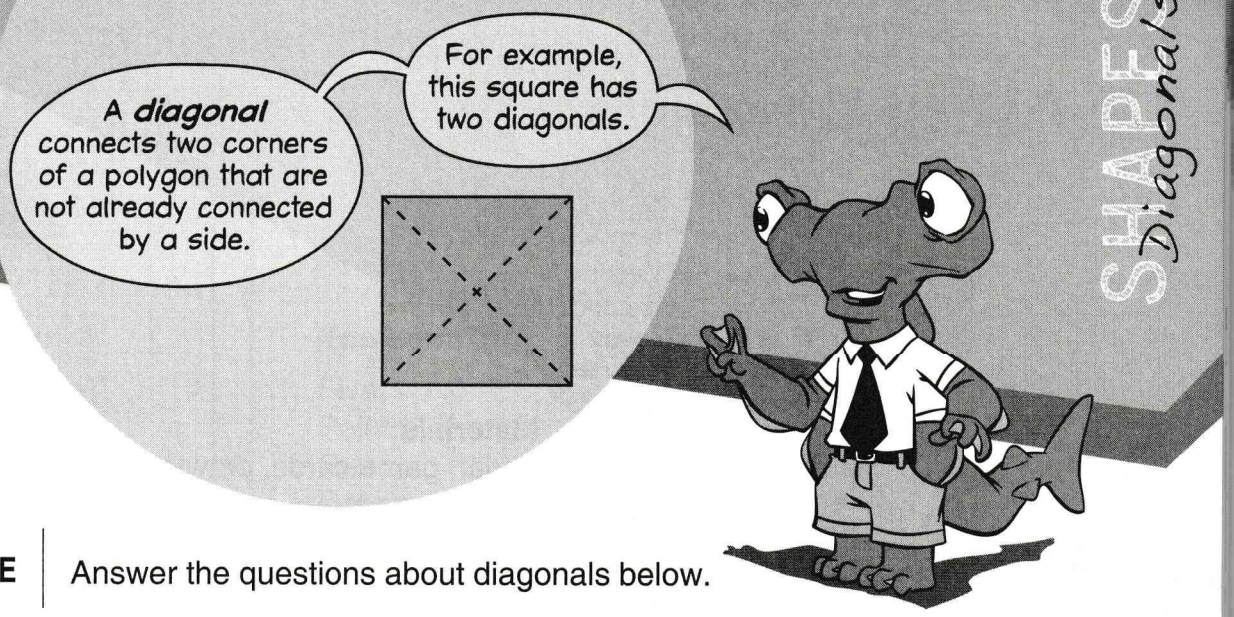
**60.** _____

**61.** _____

**62.** _____

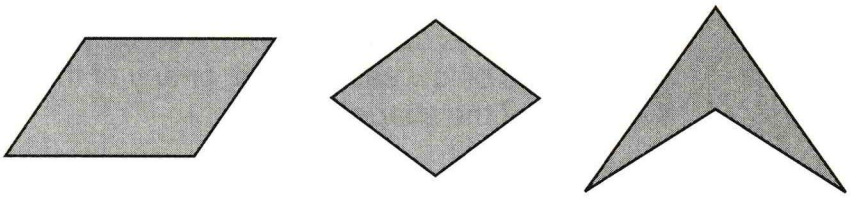
**63.** _____

**64.** _____



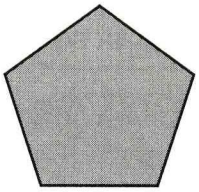

**PRACTICE** | Answer the questions about diagonals below.

**65.** All quadrilaterals have two diagonals.
Draw the two diagonals for each quadrilateral below.



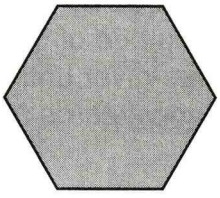
**66.** All pentagons have the same number of diagonals.
How many diagonals does a pentagon have?

**66.** _____



**67.** All hexagons have the same number of diagonals.
How many diagonals does a hexagon have?

**67.** _____



**68.** ★ A heptagon has 14 diagonals, and an octagon has 20. Look for a pattern in the number of diagonals of a quadrilateral, pentagon, hexagon, heptagon, and octagon. Continue the pattern to guess the number of diagonals of a nonagon.

**68.** _____