

Understand Tiling in Rectangles

Name: _____

Prerequisite: How can you put shapes together to make other shapes?

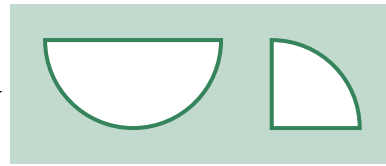


Study the example showing how to put shapes together to make other shapes. Then solve Problems 1–4.

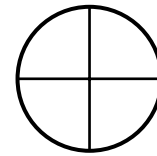
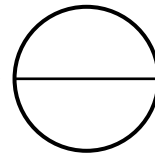
Example

How can you use smaller shapes to make a circle?

Look at the shapes in the green box.



Draw lines to show how you could use the shapes.

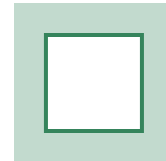


Write how many of each shape you would need.

2 

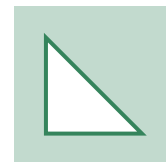
4 

- 1** Draw a line to show how you could use squares like the one in the green box to make a rectangle. How many squares would you need?



_____ squares

- 2** Draw lines to show how you could use triangles like the one in the green box to make a rectangle. How many triangles would you need?

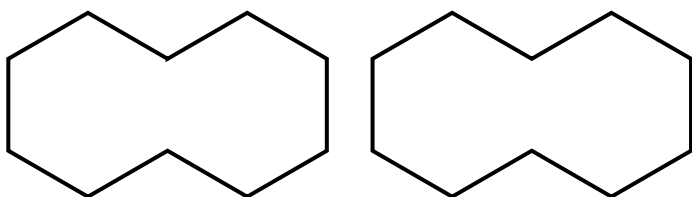
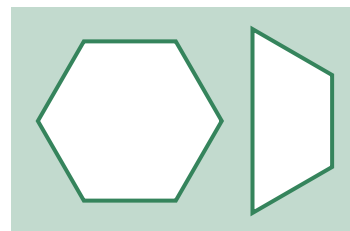


_____ triangles



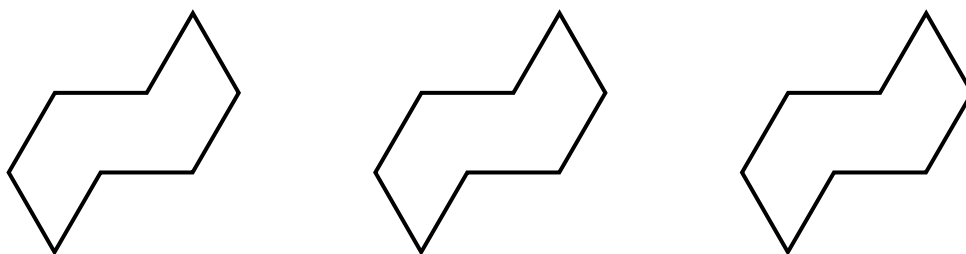
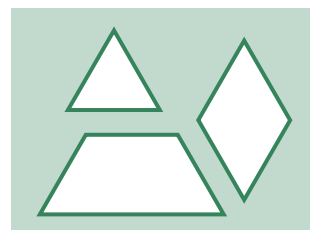
Solve.

- 3 Draw lines to show how you could use hexagons to make the first shape below. Then show how you could use trapezoids to make the second shape. How many of each shape would you need?



_____ hexagons _____ trapezoids

- 4 Draw lines to show how you could use triangles to make the first shape below. Then show how you could use trapezoids to make the second shape. Then show how you could use rhombuses to make the third shape. How many of each shape would you need?



_____ triangles _____ trapezoids _____ rhombuses

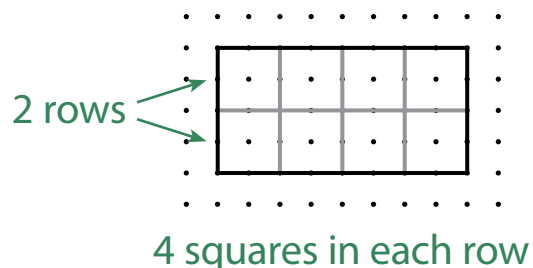
Draw and Count Squares

Study the example showing how to draw and count squares. Then solve Problems 1–8.

Example

Sal drew squares on dot paper to fill a rectangle. How many squares did he draw in all?

- You can count each square.
- Or you can count the rows and number of squares in each row.
Then add: $4 + 4 = ?$



Sal drew 8 squares in all.

Answer the questions below to find how many squares are in the rectangle.

- 1** How many rows of squares are there?

_____ rows

- 2** How many squares are in each row?

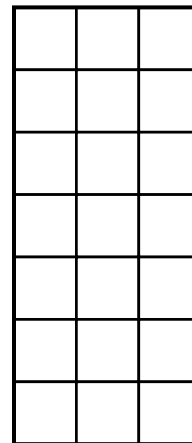
_____ squares

- 3** What number sentence can you write to find how many squares in all?

_____ + _____ + _____ + _____ + _____ + _____ + _____ = _____

- 4** How many squares are in the rectangle?

_____ squares



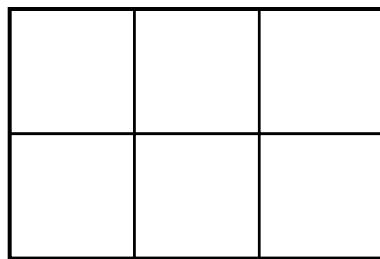
Solve.

- 5 Write a number sentence to find how many squares are in the rectangle.

_____ + _____ + _____ = _____

How many squares are in the rectangle?

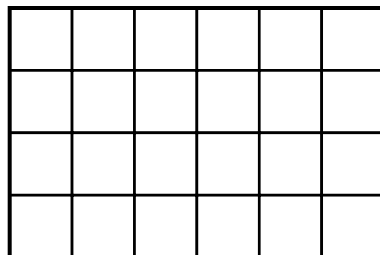
_____ squares



- 6 Write a number sentence to find how many squares are in the rectangle.

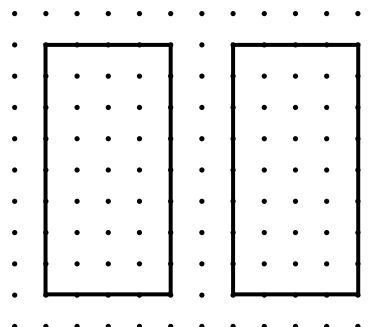
How many squares are in the rectangle?

_____ squares



- 7 The rectangles in Problems 5 and 6 are the same size. Why does the rectangle in Problem 6 have more squares?

- 8 Draw lines to show two different ways to fill the rectangles with same-sized squares.

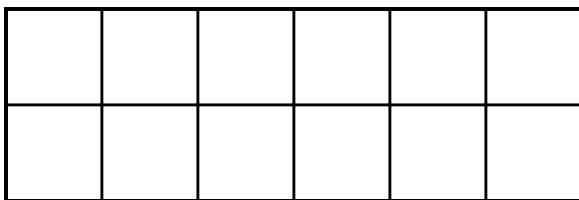


Reason and Write

Look at the example. Underline a part that you think makes it a good answer.

Example

Gwen drew this rectangle.



Gwen wrote, There are a total of 10 squares in my rectangle.

What did Gwen do right? What did she do wrong? Use pictures, words, or numbers to explain.

Gwen drew a rectangle correctly. Rectangles have 4 sides and 4 square corners. Gwen also filled her rectangle correctly because all of the shapes inside the rectangle are squares. Squares have 4 equal sides and 4 square corners like this.



Gwen's only mistake was writing that there are a total of 10 squares. Gwen should have counted to find that there are 2 rows of squares and 6 squares in each row. Then she could have added $6 + 6$. Or she should have just counted all the squares to find that there are a total of 12 squares.

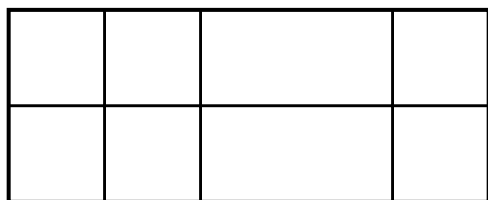
Where does the example ...

- answer both parts of the question?
- use words to explain?
- use numbers to explain?
- use a picture to explain?



Solve the problem. Use what you learned from the example.

Nick drew this rectangle.



Nick wrote, *There are a total of 8 squares in my rectangle.*

What did Nick do right? What did he do wrong?

Show your work. Use pictures, words, or numbers to explain.

Did you ...

- answer both parts of the question?
- use words to explain?
- use numbers to explain?
- use a picture to explain?

