

Split It, Add It

Use tile arrays to find rectangle area.

GRADE 3 • NY-3.MD.7.c

NY-3.MD.7.c "Use tiling to show in a concrete case that the area of a rectangle with whole-number side length a and side length $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning."

NAME _____

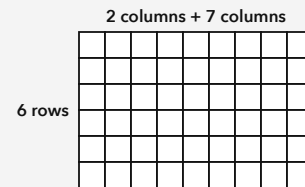
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SPLIT RECTANGLE AREAS

When a rectangle is split into two smaller rectangles, add the two areas. Multiply the shared side length by each part of the other side, then add.

WORKED EXAMPLE

Use the tile array. Find its total area.



1. Find the first part: $6 \times 2 = 12$.
2. Find the second part: $6 \times 7 = 42$.
3. Add the parts: $12 + 42 = 54$.

Answer: 54 square units

PRACTICE 4 problems

- 1** Find the area: $8 \times (3 + 5) = (8 \times 3) + (8 \times 5) =$ _____

ANSWER _____

- 2** Find the area: $9 \times (4 + 1) =$ _____

ANSWER _____

- 3** Fill in the blank: $5 \times (8 + 1) = (5 \times 8) + (5 \times 1) =$ _____

ANSWER _____

- 4** A rectangle is 3 units by $(9 + 4)$ units. What is its area?

ANSWER _____

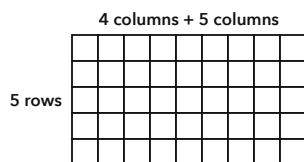
APPLY IT Show your work

- 1** The game-board model shows two rectangles side by side. How many square spaces are on the whole board?



ANSWER _____

- 2** The sticker-sheet array is shown. It has a 4-column part and a 5-column part. How many stickers fit on the sheet?



ANSWER _____

CHALLENGE One step up

A classroom rug has 8 rows of tiles. It has 9 blue columns and 1 green column. Sam says $8 \times (9 + 1) = (8 \times 9) + (8 \times 1)$. Is Sam correct? Explain.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the area: $8 \times (3 + 5) = (8 \times 3) + (8 \times 5) = \underline{\hspace{1cm}}$	64
2	Find the area: $9 \times (4 + 1) = \underline{\hspace{1cm}}$	45
3	Fill in the blank: $5 \times (8 + 1) = (5 \times 8) + (5 \times 1) = \underline{\hspace{1cm}}$	45
4	A rectangle is 3 units by $(9 + 4)$ units. What is its area?	39 square units

PART 2 • APPLY IT

1. **44 square spaces** Find each part: $4 \times 3 = 12$ and $4 \times 8 = 32$. Add $12 + 32 = 44$.
2. **45 stickers** Multiply each part: $5 \times 4 = 20$ and $5 \times 5 = 25$. Add $20 + 25 = 45$.

CHALLENGE

Yes. $8 \times 9 = 72$ and $8 \times 1 = 8$, so $72 + 8 = 80$. Also, $8 \times (9 + 1) = 8 \times 10 = 80$.

Accept area answers with or without the words square units or square spaces. Accept equivalent distributive equations and explanations that show both parts are added.