Area via Multiplication and Addition

Explore ideas and representations

Name _____ **Date** _____ **Score** _____ / 6

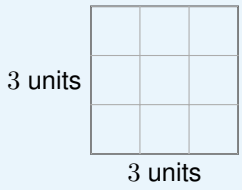
QUICK REVIEW

Find a rectangle's area by adding the number of squares in each row. Multiply the number of rows by the squares in one row to get the same area. Each unit square counts as 1 square unit.

Worked example

Write an addition equation and a multiplication equation for the area.

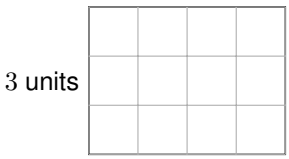
1. There are 3 rows, each containing 3 unit squares.
2. Adding row sizes gives $3 + 3 + 3 = 9$. The equal-addend form is $3 \times 3 = 9$.
Answer: $3 + 3 + 3 = 3 \times 3 = 9$ square units.



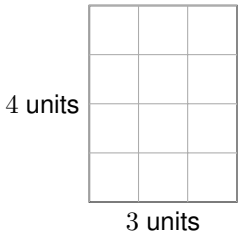
Practice Problems

Show your thinking.

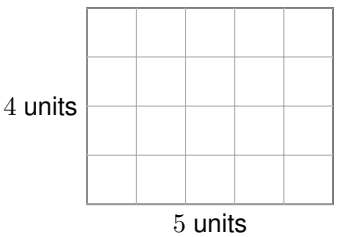
1. Write an addition equation and a multiplication equation for the area.



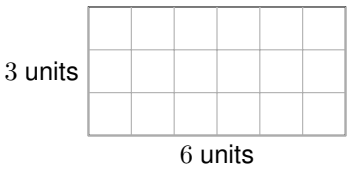
2. Write an addition equation by columns. Then write the matching multiplication.



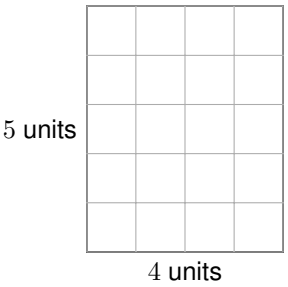
3. Find the area by adding a 2-row part and a 2-row part. Then check with one product.



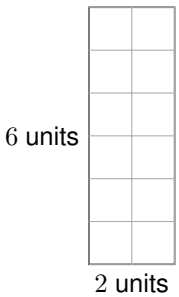
4. Write an addition equation and a multiplication equation for the area.



5. Ian adds the side counts: $4 + 5 = 9$. Is this the area? Write the correct repeated sum.



6. Write an addition equation by columns. Then write the matching multiplication.



Answer Key

1. $4 + 4 + 4 = 3 \times 4 = 12$ square units.
2. $4 + 4 + 4 = 3 \times 4 = 12$ square units.
3. 20 square units.
4. $6 + 6 + 6 = 3 \times 6 = 18$ square units.
5. No; area 20 square units.
6. $6 + 6 = 2 \times 6 = 12$ square units.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. There are 3 rows, each containing 4 unit squares.

2. Adding row sizes gives $4 + 4 + 4 = 12$. The equal-addend form is $3 \times 4 = 12$.

Problem 2

1. There are 3 columns with 4 squares each.

2. The sum $4 + 4 + 4 = 12$ matches $3 \times 4 = 12$.

Problem 3

1. Two rows have $2 \times 5 = 10$ squares. The other 2 rows have $2 \times 5 = 10$.

2. $10 + 10 = 20$, matching $4 \times 5 = 20$.

Problem 4

1. There are 3 rows, each containing 6 unit squares.

2. Adding row sizes gives $6 + 6 + 6 = 18$. The equal-addend form is $3 \times 6 = 18$.

Problem 5

1. Adding sides counts only $4 + 5 = 9$ length units, not all the squares.

2. The 5 equal rows give $4+4+4+4+4 = 20$, or $5 \times 4 = 20$.

Problem 6

1. There are 2 columns with 6 squares each.

2. The sum $6 + 6 = 12$ matches $2 \times 6 = 12$.

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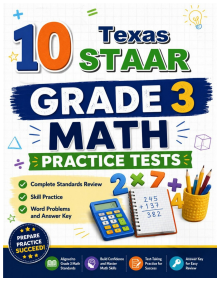

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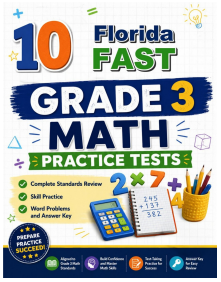

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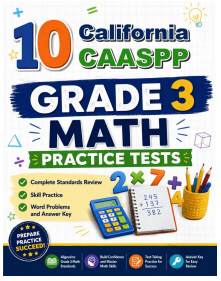

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