Area by Tiling

Apply the skill to decisions and designs

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

QUICK REVIEW

Cover the rectangle with unit squares, without gaps or overlaps. Each square covers 1 square unit. Count the tiles in one row and the number of equal rows. The row pattern repeats to cover the whole rectangle.

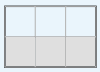
Worked example

The bottom row is tiled. How many tiles will cover the whole rectangle?

1. The bottom row contains 3 tiles. The side length allows 2 equal rows.

2. Repeat the tiled row 2 times: $2 \times 3 = 6$ tiles.

Answer: 6 tiles.

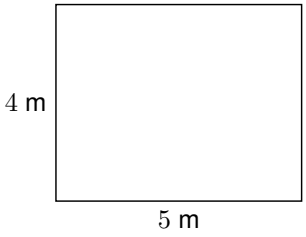


Shaded = one covering tile

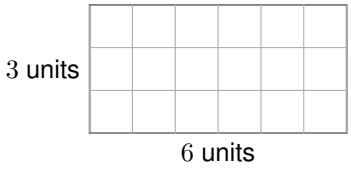
Practice Problems

Show your thinking.

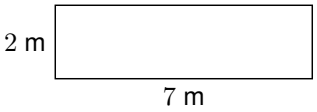
1. A floor is 5 m by 4 m. Each tile is 1 m by 1 m. You have 23 tiles. How many remain after tiling the floor?



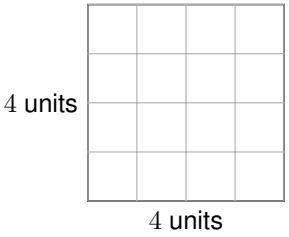
2. A tiled mat has 3 rows of 6 unit tiles. Add one whole row of 6 tiles along the top. Find the new area.



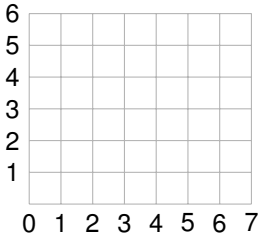
3. A floor is 7 m by 2 m. Each tile is 1 m by 1 m. You have 17 tiles. How many remain after tiling the floor?



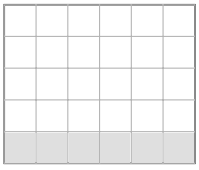
4. A tiled mat has 4 rows of 4 unit tiles. Add one whole row of 4 tiles along the top. Find the new area.



5. 15 unit tiles make a rectangle with 5 equal rows. How many tiles go in each row? Sketch the tiling on the grid.



6. The bottom row is tiled. How many tiles will cover the whole rectangle?



Shaded = one covering tile

Answer Key

1. 3 tiles.
2. 24 square units.
3. 3 tiles.
4. 20 square units.
5. 3 tiles per row.
6. 30 tiles.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The floor fits 4 rows of 5 tiles: $4 \times 5 = 20$.
2. $23 - 20 = 3$ tiles remain after a gap-free, nonoverlapping cover.

Problem 2

1. The old area is $3 \times 6 = 18$ square units.
2. The new row adds 6: $18 + 6 = 24$. There are now 4 rows.

Problem 3

1. The floor fits 2 rows of 7 tiles: $2 \times 7 = 14$.
2. $17 - 14 = 3$ tiles remain after a gap-free, nonoverlapping cover.

Problem 4

1. The old area is $4 \times 4 = 16$ square units.
2. The new row adds 4: $16 + 4 = 20$. There are now 5 rows.

Problem 5

1. Share 15 tiles into 5 rows: $15 \div 5 = 3$.
2. Check: $5 \times 3 = 15$ tiles; draw 5 rows with 3 tiles in each.

Problem 6

1. The bottom row contains 6 tiles. The side length allows 5 equal rows.
2. Repeat the tiled row 5 times: $5 \times 6 = 30$ tiles.

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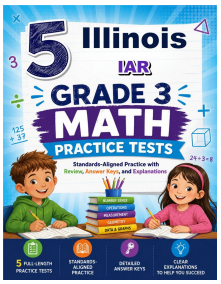

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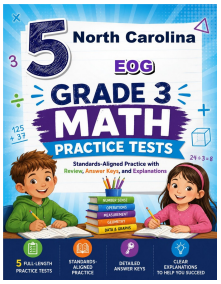

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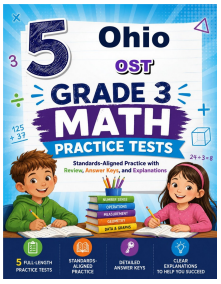

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