Area by Tiling

Spot mistakes, reason, and work backward

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.

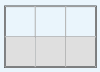
Worked example

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.

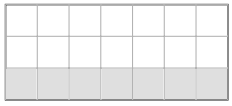


Shaded = one covering tile

Practice Problems

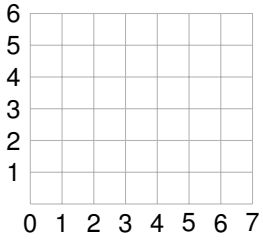
Show your thinking.

1. A helper tiles one row of 7 squares and says the entire 3-row rectangle needs only 7 tiles. Correct the total.

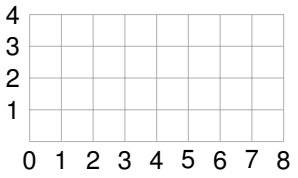


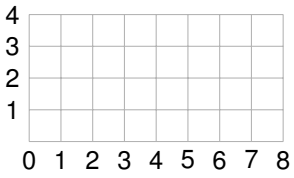
Shaded = one covering tile

2. 20 unit tiles make a rectangle with 5 equal rows. How many tiles go in each row? Sketch the tiling on the grid.

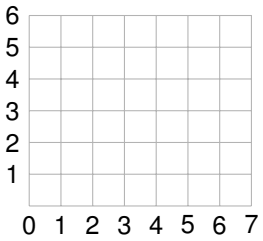


3. Use 24 unit tiles to design two rectangles: one with 3 rows and one with 4 rows. Find tiles per row and sketch both tilings.

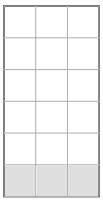




4. 15 unit tiles make a rectangle with 3 equal rows. How many tiles go in each row? Sketch the tiling on the grid.

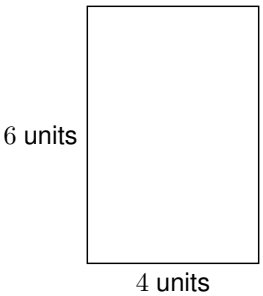


5. A helper tiles one row of 3 squares and says the entire 6-row rectangle needs only 3 tiles. Correct the total.



Shaded = one covering tile

6. Draw unit-square tiles to cover the rectangle. Use the side lengths to count rows and columns. Find its area.



Answer Key

1. 21 tiles.
2. 4 tiles per row.
3. 3 rows of 8 and 4 rows of 6; both have area 24 square units.
4. 5 tiles per row.
5. 18 tiles.
6. 6 rows of 4 tiles; 24 square units.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The first row uses 7 tiles, but 2 more rows need $2 \times 7 = 14$ tiles.

2. All rows need $7 + 14 = 21$ tiles.

Problem 2

1. Share 20 tiles into 5 rows: $20 \div 5 = 4$.

2. Check: $5 \times 4 = 20$ tiles; draw 5 rows with 4 tiles in each.

Problem 3

1. The first design needs $24 \div 3 = 8$ tiles per row; check $3 \times 8 = 24$.

2. The second needs $24 \div 4 = 6$ tiles per row; check $4 \times 6 = 24$. Both must use every tile once.

Problem 4

1. Share 15 tiles into 3 rows: $15 \div 3 = 5$.

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

Problem 5

1. The first row uses 3 tiles, but 5 more rows need $5 \times 3 = 15$ tiles.

2. All rows need $3 + 15 = 18$ tiles.

Problem 6

1. A one-unit tile fits 4 times along the bottom and 6 times along the side.

2. The full tiling has $6 \times 4 = 24$ squares with no gaps or overlaps.

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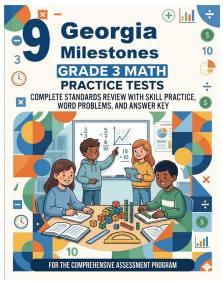

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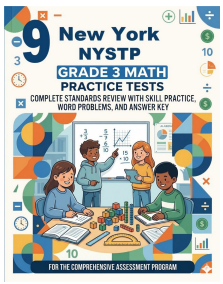

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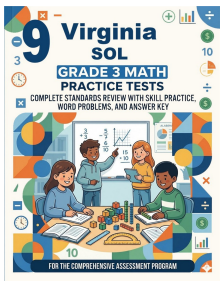

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