Area as Additive

Apply the skill to decisions and designs

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

QUICK REVIEW

Area is additive. Split a shape into rectangles that cover it without overlap. Multiply to find each rectangle's area, then add the areas. A shared edge adds no extra area, and an overlapping patch should count only once.

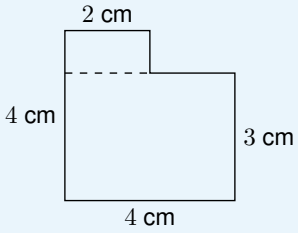
Worked example

Split at the dashed line. Find the two rectangle areas and add them.

1. The lower rectangle has area $4 \times 3 = 12$ cm^2. The upper height is $4 - 3 = 1$ cm.

2. The upper area is $2 \times 1 = 2$ cm^2. Total: $12 + 2 = 14$ cm^2.

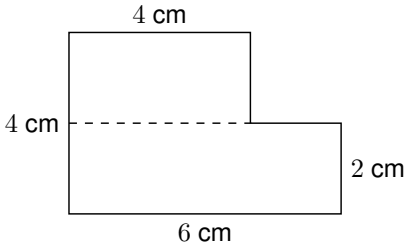
Answer: 14 cm^2.



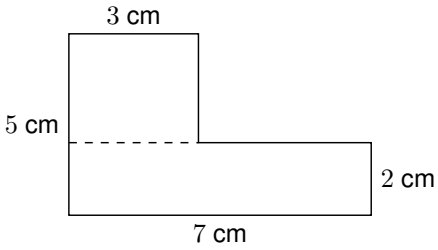
Practice Problems

Show your thinking.

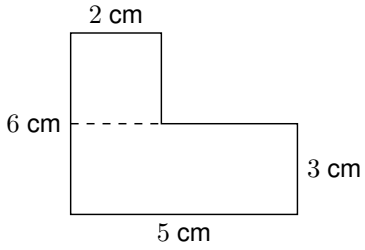
1. Paint the lower rectangle blue and the upper rectangle white. Find both painted areas and their total.



2. Paper can cover 21 cm^2. Is that enough for this whole figure? Find the shortage or extra.

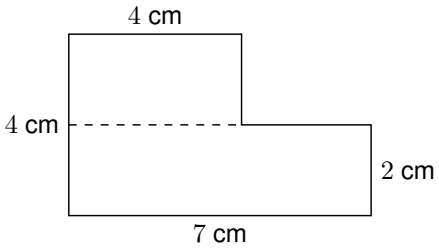


3. Extend the top of the upper rectangle upward by 1 cm. Keep its width 2 cm. Find the new total area.



4. Mat A joins a 6-cm-by-2-cm rectangle to a 3-cm-by-2-cm rectangle. Mat B joins a 5-cm-by-2-cm rectangle to a 4-cm-by-2-cm rectangle. The parts do not overlap. Does either mat cover more area?

5. A craft board is 7 cm by 4 cm. Cover all but a 3-cm-by-2-cm corner. Ana says a 20 cm^2 sheet is enough by area. Is she right? Show the needed area as a sum of rectangles.



6. A mural has a 6-cm-by-3-cm bottom and two separate 2-cm-by-2-cm panels above it. One panel is removed. Then a 1-cm-by-3-cm strip is added at the side without overlap. How much area does the new mural cover?

Answer Key

1. Blue 12; white 8; total 20 cm^2.
2. Not enough; 2 cm^2 short.
3. 23 cm^2.
4. The areas are equal: 18 cm^2 each.
5. No; 22 cm^2 is needed, so it is 2 cm^2 short.
6. 25 cm^2.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Blue: $6 \times 2 = 12$ cm^2. White: $4 \times (4 - 2) = 8$ cm^2.

2. The colors meet only at an edge, so add $12 + 8 = 20$ cm^2.

Problem 2

1. Find the nonoverlapping areas: $7 \times 2 = 14$ and $3 \times 3 = 9$ square centimeters.

2. The figure needs $14 + 9 = 23$ cm^2; $23 - 21 = 2$ cm^2 more is needed.

Problem 3

1. Lower area: $5 \times 3 = 15$ cm^2. The original upper height is $6 - 3 = 3$ cm, so upper area is $2 \times 3 = 6$ cm^2.

2. The added strip covers $2 \times 1 = 2$ cm^2; total $21 + 2 = 23$ cm^2.

Problem 4

1. Mat A: $6 \times 2 + 3 \times 2 = 12 + 6 = 18$ cm^2.

2. Mat B: $5 \times 2 + 4 \times 2 = 10 + 8 = 18$ cm^2. The shapes can differ but cover the same area.

Problem 5

1. The lower two rows cover $7 \times 2 = 14$ cm^2. In the upper rows, width is $7 - 3 = 4$ cm.

2. The upper area is $4 \times 2 = 8$ cm^2. Total $14 + 8 = 22$ cm^2, so $22 - 20 = 2$ cm^2 more is needed.

Problem 6

1. The bottom has $6 \times 3 = 18$ cm^2. One remaining upper panel covers $2 \times 2 = 4$ cm^2.

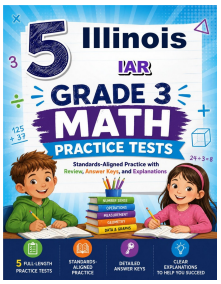
2. The new strip covers $1 \times 3 = 3$ cm^2. Add the nonoverlapping parts: $18 + 4 + 3 = 25$ cm^2.

TESTINAR

Keep Building Grade 3 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 3 books



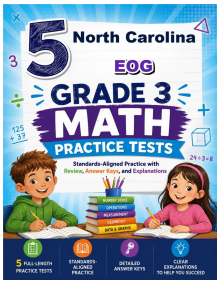
ILLINOIS IAR

5 Full-Length Math Practice Tests

Build Grade 3 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



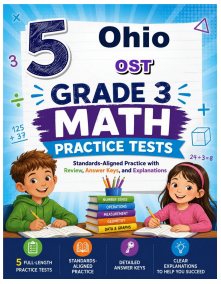
NORTH CAROLINA EOG

5 Full-Length Math Practice Tests

Build Grade 3 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



OHIO OST

5 Full-Length Math Practice Tests

Build Grade 3 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 3 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/3