Ratios with Scale Drawings

Ratios with scale drawings: Applications and decisions

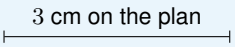
Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

A scale is a ratio of drawing length to actual length. At 1 cm : 4 m, a 3-cm segment represents $3 \times 4 = 12$ m. Reverse by dividing: 20 m requires $20/4 = 5$ cm. For area, convert both side lengths before multiplying.

Worked example

At 1 cm : 5 m, what actual length does 3 cm represent?



1. Each drawing centimeter represents 5 m; $3 \times 5 = 15$ m.
2. Reverse check: $15 \div 5 = 3$ cm.

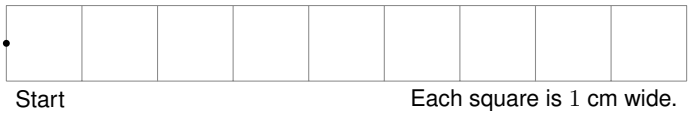
Answer: 15 m.

Practice Problems

Show your thinking.

1. A garden plan shows an 8-cm path at 1 cm : 5 m. Find walking distance.

2. A 32-m pool must fit in 9 cm on a plan. Choose 1 cm : 2 m or 1 cm : 4 m. Draw its length to the right from the start dot.



3. A 6-cm route at 1 cm : 10 m must fit a 70-m cable. Find required cable length. Is the cable long enough, and how much is left?

4. At 1 cm : 6 m, fit a 48-m court on a page. Find its length in cm.

5. A model wall is 7 cm. At 1 cm : 3 m, find actual wall length. Fencing costs 4 dollars per actual meter. Find the fencing cost.

6. A 24-m path is drawn at 1 cm : 4 m, then at 1 cm : 6 m. How much shorter is the second drawing?

Answer Key

1. 40 m.
2. Use 1 cm : 4 m and draw an 8-cm segment.
3. 60 m. Yes; 10 m is left.
4. 8 cm.
5. 21 m. 84 dollars.
6. 2 cm shorter.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Each drawing centimeter represents 5 m; $8 \times 5 = 40$ m.
2. Reverse check: $40 \div 5 = 8$ cm.

Problem 2

1. At the first scale the length is $32/2 = 16$ cm, which is too long.
2. At the second scale the length is $32/4 = 8$ cm, which fits.
3. Draw right from the dot across 8 squares; $8 \times 4 = 32$ m checks the scale.

Problem 3

1. Each drawing centimeter represents 10 m; $6 \times 10 = 60$ m.
2. Reverse check: $60 \div 10 = 6$ cm.
3. The route needs $6 \times 10 = 60$ m; spare cable $= 70 - 60 = 10$ m.

Problem 4

1. Each drawing centimeter represents 6 m, so drawing length $= 48 \div 6 = 8$ cm.
2. Check the actual length: $8 \times 6 = 48$ m.

Problem 5

1. Each drawing centimeter represents 3 m; $7 \times 3 = 21$ m.
2. Reverse check: $21 \div 3 = 7$ cm.
3. Actual length $= 7 \times 3 = 21$ m; cost $= 21 \times 4 = 84$ dollars.

Problem 6

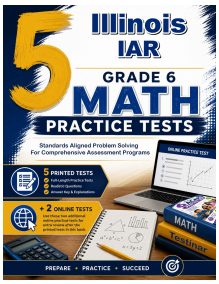
1. First drawing $= 24/4 = 6$ cm; second $= 24/6 = 4$ cm.
2. Difference $= 6 - 4 = 2$ cm; actual distance remains 24 m.

TESTINAR

Keep Building Grade 6 Math Skills

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

All Grade 6 books



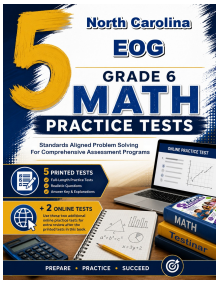
ILLINOIS IAR

5 Full-Length Math Practice Tests

Build Grade 6 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



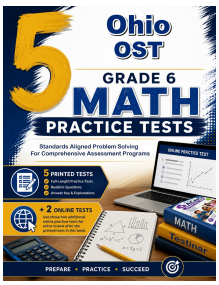
NORTH CAROLINA EOG

5 Full-Length Math Practice Tests

Build Grade 6 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 6 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 6 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/6