

Draw it. Explain it. Math

sample: text version

The Draw it. Explain it. Math sample written out in words, for screen readers and for anyone who prefers text. It has the same instructions, questions and answers as the PDF.

Every picture is described: what is drawn, where it is and how it is filled. The descriptions do not give the answers away. The answers and explanations are in their own section at the end, after all the questions.

The first page reads: Reasonwell Press · Math | Grades 4-6 | Practice with answers · Draw it. Explain it.

About this sample

Six written questions for grades 4 to 6, each followed on the printed page by space to draw or write. The PDF has no separate parent page: the questions start on the first page, and the explained answers are on the last page.

Questions

6 questions, in the order they are printed, on 2 pages.

How the pictures are described

- Only the first question has a drawing. The others are text with blank lines for writing.

DRAW IT. EXPLAIN IT.

Sample page 1

01 Equivalent fractions

Shade one half of each equal-length bar. The first has 2 parts; the second has 4. Write a fraction for each shaded amount.

The picture:

Two empty bars of the same length, one above the other. The top bar is divided into 2 equal parts. The bottom bar is divided into 4 equal parts. Nothing is shaded yet.

02 Explain the difference

Mia says $\frac{1}{3}$ and $\frac{1}{4}$ are the same because each has a 1 on top. Draw or explain why the size of the equal parts matters.

Two blank lines for writing.

03 Missing angle

Two angles together make a straight line (180 degrees). One is 65 degrees. What is the other angle? Explain how you know.

Two blank lines for writing.

DRAW IT. EXPLAIN IT.

Sample page 2

04 Perimeter and area

A rectangle is 6 cm long and 3 cm wide. Find its perimeter and its area. Include the correct units.

Two blank lines for writing.

05 Same perimeter?

A 4 cm by 4 cm square and a 6 cm by 2 cm rectangle both have perimeter 16 cm. Do they have the same area? Show your calculation.

Two blank lines for writing.

06 A useful check

A rectangle has area 24 square cm and one side is 4 cm. Find the other side, then its perimeter.

Two blank lines for writing.

Answers and explanations

Try the questions first. The answers follow below.

More than a number.

1. Equivalent fractions

Shade 1 of the 2 parts and 2 of the 4 parts. The shaded lengths match: $\frac{1}{2} = \frac{2}{4}$. Equal-sized wholes are essential to this comparison.

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2. Size of the parts

If the wholes are equal, splitting one into 3 equal pieces makes larger pieces than splitting the other into 4. One third is larger than one fourth.

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3. Missing angle

$180 - 65 = 115$ degrees. Check: $65 + 115 = 180$. Subtract from the whole straight angle, not from 90.

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4. Rectangle

Perimeter = $6 + 3 + 6 + 3 = 18$ cm. Area = $6 \times 3 = 18$ square cm. The numbers happen to match; they measure different things.

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5. Same perimeter, different area

The square has area $4 \times 4 = 16$ square cm. The rectangle has area $6 \times 2 = 12$ square cm. Equal perimeter does not imply equal area.

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6. Reverse the calculation

24 divided by 4 = 6 cm for the other side. Perimeter = $4 + 6 + 4 + 6 = 20$ cm.

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