LESSON MAKER PRO

Piece by Piece

Find polygon areas by joining or removing simpler shapes.

GRADE 6 · 6.GM.B.26.a

6.GM.B.26.a "Apply the techniques of composing and decomposing polygons to find area in the context of solving real-world and mathematical problems."

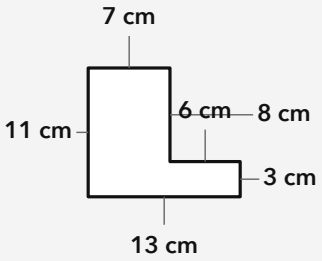
NAME _____ DATE _____

THE BIG IDEA

Split a polygon into rectangles and triangles, then add their areas. Or imagine a larger rectangle around it and subtract the missing part.

WORKED EXAMPLE

Find the area of the polygon shown.



1. Whole rectangle: 13 × 11 = 143 cm^2.
2. Missing rectangle: 6 × 8 = 48 cm^2.
3. Polygon: 143 - 48 = 95 cm^2.

Answer: 95 cm^2

PRACTICE 4 problems

1 Join two rectangles without overlap. Their dimensions are 12 cm by 4 cm and 5 cm by 2 cm. Find the total area.

ANSWER _____

2 Remove a 4 cm by 2 cm rectangle from a 10 cm by 9 cm rectangle. Find the area left.

ANSWER _____

3 Join a right triangle with perpendicular sides of 12 cm and 10 cm to a 5 cm by 4 cm rectangle without overlap. Find the total area.

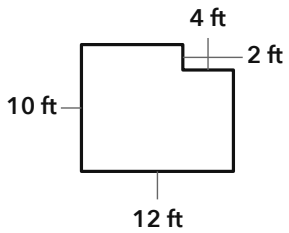
ANSWER _____

4 Remove a 5 cm by 4 cm corner from a 16 cm by 9 cm rectangle. Find the area left.

ANSWER _____

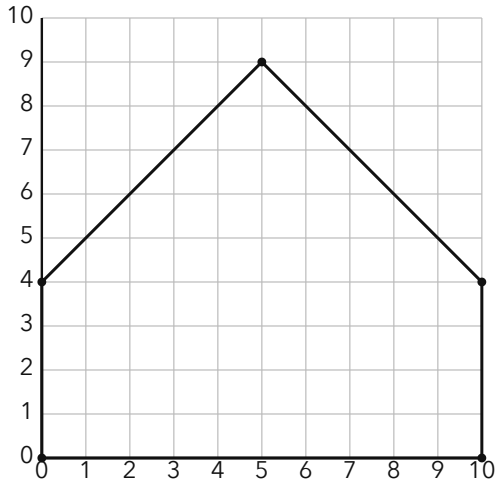
APPLY IT Show your work

1 The school fair paints the booth wall section shown. How many square feet will be painted?



ANSWER _____

2 A gaming club makes a logo panel shaped like the polygon. Each grid unit is 1 inch. Find its area.



ANSWER _____

CHALLENGE One step up

A 5 cm by 2 cm corner is cut from a 14 cm by 12 cm rectangle. Find the area left. Show one subtraction equation and one addition equation.

WORK SPACE AND ANSWER

ANSWER KEY

Piece by Piece

GRADE 6 · 6.GM.B.26.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Join two rectangles without overlap. Their dimensions are 12 cm by 4 cm and 5 cm by 2 cm. Find the total area.	**58 cm^2**
2	Remove a 4 cm by 2 cm rectangle from a 10 cm by 9 cm rectangle. Find the area left.	**82 cm^2**
3	Join a right triangle with perpendicular sides of 12 cm and 10 cm to a 5 cm by 4 cm rectangle without overlap. Find the total area.	**80 cm^2**
4	Remove a 5 cm by 4 cm corner from a 16 cm by 9 cm rectangle. Find the area left.	**124 cm^2**

PART 2 · APPLY IT

1. **112 ft^2** Subtract the missing corner from the full rectangle: 12 × 10 - 4 × 2 = 112 ft^2.
2. **65 in^2** Add the lower rectangle and upper triangle: 10 × 4 + (10 × 5) / 2 = 65 in^2.

CHALLENGE

158 cm^2; 14 × 12 - 5 × 2 = 158; 9 × 12 + 5 × 10 = 158.

Accept any correct split into nonoverlapping pieces. For the challenge, addition equations may use different valid splits.