LESSON MAKER PRO

Trapezoid Design Lab

Find the area in each design.

GRADE 7 · 7.GM.2.1

7.GM.2.1 "Develop and use the formula to determine the area of a trapezoid."

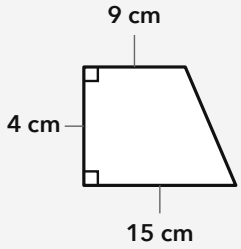
NAME _____ DATE _____

WHY THE FORMULA WORKS

Two matching trapezoids can fit together to make a parallelogram. The parallelogram's base is the sum of the two parallel sides, so one trapezoid has half its area: $A = (b_1 + b_2)h/2$. The height must be perpendicular to both bases.

WORKED EXAMPLE

Find the area of the trapezoid shown.

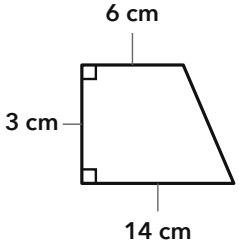


1. Add the bases: 9 + 15 = 24.
2. Multiply by the height: 24 × 4 = 96.
3. Take half: 96 / 2 = 48.

Answer: 48 cm²

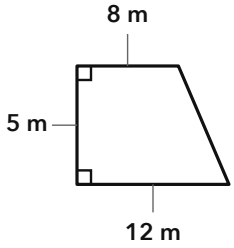
PRACTICE 6 problems

1 Find the area of the trapezoid shown.



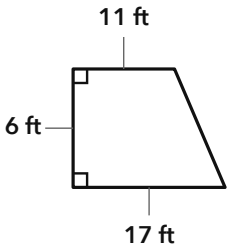
ANSWER _____

2 Find the area of the trapezoid shown.



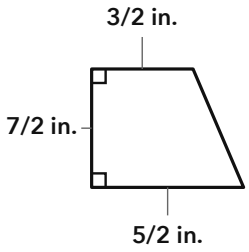
ANSWER _____

3 Find the area of the trapezoid shown.



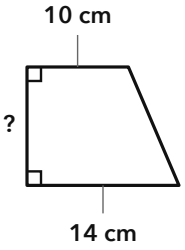
ANSWER _____

4 Find the area of the trapezoid shown.



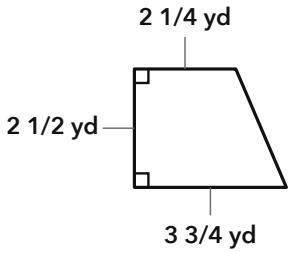
ANSWER _____

5 The trapezoid has an area of 72 cm^2. Find its height.



ANSWER _____

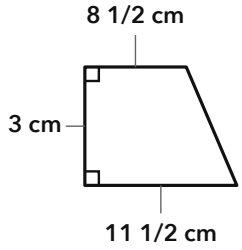
6 Find the area of the trapezoid shown.



ANSWER _____

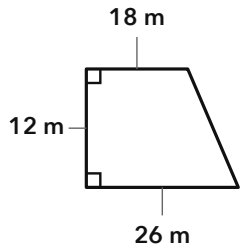
APPLY IT Show your work

1 An art club makes a laptop sticker in the shape shown. How many square centimeters of sticker paper does one sticker use?



ANSWER _____

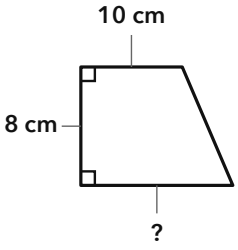
2 A skate park plans an outdoor skating area in the shape shown. How many square meters will it cover?



ANSWER _____

CHALLENGE One step up

The trapezoid has an area of 104 cm^2. Find the unknown base length, and explain how you know.



WORK SPACE AND ANSWER

ANSWER KEY

Trapezoid Design Lab

GRADE 7 · 7.GM.2.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the area of the trapezoid shown.	**30 cm^2**
2	Find the area of the trapezoid shown.	**50 m^2**
3	Find the area of the trapezoid shown.	**84 ft^2**
4	Find the area of the trapezoid shown.	**7 $in.^2$**
5	The trapezoid has an area of 72 cm^2. Find its height.	**6 cm**
6	Find the area of the trapezoid shown.	**7 1/2 yd^2**

PART 2 · APPLY IT

1. **30 cm^2** The bases add to 20 cm. Half of 20 × 3 is 30 cm^2.
2. **264 m^2** The bases add to 44 m. Half of 44 × 12 is 264 m^2.

CHALLENGE

16 cm. Since 104 = (10 + x) × 8 / 2, the bases must add to 26 cm. The unknown base is 26 − 10 = 16 cm.

Accept equivalent fraction or decimal forms with correct square units for areas. For the challenge, accept any valid explanation that finds the base sum before subtracting 10 cm.