LESSON MAKER PRO

Shape Area Quest

Find the area of trapezoids, parallelograms, and rhombi.

GRADE 7 · MA.7.GR.1.1

MA.7.GR.1.1 "Apply formulas to find the areas of trapezoids, parallelograms and rhombi."

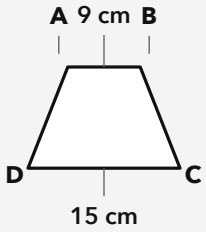
NAME _____ DATE _____

AREA FORMULA TOOLKIT

For a parallelogram, multiply the base by the perpendicular height. For a trapezoid, add the parallel bases, divide by 2, then multiply by the height. For a rhombus, multiply the diagonals and divide by 2.

WORKED EXAMPLE

Find the area of the trapezoid shown. Its perpendicular height is 8 cm.

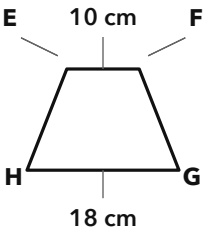


1. Use $A = (b_1 + b_2) / 2 \times h$.
2. Substitute: $A = (9 + 15) / 2 \times 8$.
3. Calculate: $A = 24 / 2 \times 8 = 12 \times 8 = 96$.

Answer: 96 cm^2

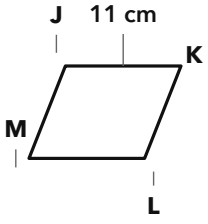
PRACTICE 6 problems

1 Find the area of the trapezoid shown. Its perpendicular height is 5 cm.



ANSWER _____

2 Find the area of the parallelogram shown. The perpendicular height to the labeled base is 6 cm.



ANSWER _____

3 A rhombus has diagonals measuring 16 m and 10 m. Find its area.

ANSWER _____

4 A parallelogram has a base of 13 yd and a perpendicular height of 7 yd. Find its area.

ANSWER _____

5 A trapezoid has parallel bases of 4 cm and 20 cm. Its perpendicular height is 14 cm. Find its area.

ANSWER _____

6 A rhombus has diagonals measuring 22 in. and 26 in. Find its area.

ANSWER _____

APPLY IT Show your work

1 The school art club is painting a parallelogram-shaped mural panel. The panel has a base of 25 ft and a perpendicular height of 16 ft. How many square feet will the club paint?

WORK SPACE

ANSWER _____

2 A skate park orders a trapezoid-shaped sign. Its parallel sides measure 28 in. and 44 in., and its perpendicular height is 18 in. What is the area of the sign?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A rhombus has an area of 390 cm^2 and one diagonal measuring 30 cm. Find the length of the other diagonal. Explain how you used the area formula.

WORK SPACE AND ANSWER

ANSWER KEY

Shape Area Quest

GRADE 7 · MA.7.GR.1.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the area of the trapezoid shown. Its perpendicular height is 5 cm.	**70 cm^2**
2	Find the area of the parallelogram shown. The perpendicular height to the labeled base is 6 cm.	**66 cm^2**
3	A rhombus has diagonals measuring 16 m and 10 m. Find its area.	**80 m^2**
4	A parallelogram has a base of 13 yd and a perpendicular height of 7 yd. Find its area.	**91 yd^2**
5	A trapezoid has parallel bases of 4 cm and 20 cm. Its perpendicular height is 14 cm. Find its area.	**168 cm^2**
6	A rhombus has diagonals measuring 22 in. and 26 in. Find its area.	**286 $in.^2$**

PART 2 · APPLY IT

1. **400 ft^2** Use A = bh. Multiply 25 by 16 to get 400.
2. **648 $in.^2$** Add the bases, divide by 2, then multiply by the height: (28 + 44) / 2 × 18 = 648.

CHALLENGE

26 cm; 390 = 30 × d / 2, so 780 = 30d and d = 26.

Accept equivalent numerical work and correct area units. For the challenge, accept any clear explanation that doubles the area and divides by the known diagonal.