

Lesson 5-3

Reinforce Understanding

Determine the Area of Trapezoids

I can find the area of a trapezoid using the formula $A = \frac{1}{2}(b_1 + b_2) \times h$.

Worked model

An isosceles trapezoid has a top base of 8 m, a bottom base of 14 m, and a height of 6 m. Find the area.

1. Decompose it: a rectangle in the middle and two matching triangles on the ends.
2. Rectangle: top base by height. $8 \times 6 = 48$
3. Leftover bottom: $14 - 8 = 6$, split evenly into two triangle bases of 3 m.
4. Each triangle $\frac{1}{2} \times 3 \times 6 = 9$, so two give 18. $48 + 18 = 66$

Answer: The area of the trapezoid is 66 square meters (66 m^2).

Practice

Complete each exercise. Show the reasoning that supports your answer.

1. Use the formula $A = \frac{1}{2} \times (b_1 + b_2) \times h$ to find the area of each trapezoid.

Complete the table. Show how you found each value.

Trapezoid	Base 1	Base 2	Height	Area
Shape A	4 ft	6 ft	3 ft	
Shape B	8 ft	12 ft	5 ft	

Show your work

2. What is the area of a trapezoid with bases 6 cm and 10 cm, and height 4 cm?

Circle the letter of the best answer. Show how you know.

- A. 24 sq cm
- B. 32 sq cm
- C. 40 sq cm
- D. 64 sq cm

3. A trapezoid has an area of 45 sq ft, bases of 7 ft and 11 ft. What is the height?

Circle the letter of the best answer. Show how you know.

- A. 3 ft
- B. 5 ft
- C. 9 ft
- D. 10 ft