

Lesson 5-4 • Group 2

Reinforce Understanding

5.4 Small Group • Group 2

I can find the area of a composite figure by decomposing it into basic shapes, including a regular polygon split into triangles, and adding or subtracting the areas, explain why the method works, and use it on a problem I have not seen before.

Worked model

A regular octagon has sides of 12 in. A triangle drawn from the center to one side has a height of 14 in. Find the area.

1. A regular octagon has eight equal sides, so it decomposes into eight congruent triangles.
2. Find the area of ONE triangle. $\frac{1}{2} \times 12 \times 14 = 84$
3. Every triangle matches, so multiply by how many there are. $84 \times 8 = 672$

Answer: The area of the octagon is 672 square inches (672 in²).

Practice

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

1. Complete the table.

Complete the table. Show how you found each value.

Figure	Shape 1 Area	Shape 2 Area	Operation	Total Area
L-shaped deck	48 sq ft	20 sq ft	Add	
Floor with alcove	90 sq ft	15 sq ft	Add	
Wall with window cutout	120 sq ft	18 sq ft	Subtract	
Courtyard with fountain cutout	200 sq ft	36 sq ft	Subtract	

Show your work
