

Lesson 5-8

Reinforce Understanding

Determine Surface Area of Pyramids

I can find the surface area of a pyramid by adding the base area and the lateral faces.

Worked model

A square pyramid has a base 10 cm on each side. Each triangular face has a slant height of 12 cm. Find the surface area.

1. The net is a square base with 4 congruent triangles, one on each side.
2. Area of the square base. $10 \times 10 = 100$
3. One triangular face uses the slant height. $\frac{1}{2} \times 10 \times 12 = 60$
4. Four faces plus the base. $60 \times 4 = 240$, then $240 + 100 = 340$

Answer: The surface area is 340 square centimeters (340 cm^2).

Practice

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

1. Find the area of one lateral face for each pyramid.

Complete the table. Show how you found each value.

Pyramid	Base Edge	Slant Height	Area of One Face
Pyramid 1	4 in	9 in	
Pyramid 2	6 cm	5 cm	
Pyramid 3	10 ft	8 ft	

Show your work

2. Put the steps in order for finding the surface area of a square pyramid (base edge 6, slant height 10).

Write the name of the correct group on each line.

Groups:

- _____ Find base area: $6 \times 6 = 36$
- _____ Find one lateral face: $\frac{1}{2} \times 6 \times 10 = 30$
- _____ Multiply by 4 faces: $4 \times 30 = 120$
- _____ Add base + lateral: $36 + 120$
- _____ SA = 156 in^2

3. A square pyramid has a base edge of 5 in and a slant height of 7 in. What is the surface area?

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

- A. 70 in^2
- B. 95 in^2
- C. 95 in^3
- D. 120 in^2