LESSON MAKER PRO

Cover or Fill?

Find surface area and volume of rectangular prisms.

GRADE 7 · 7A.GM.B.39

7A.GM.B.39 "Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right rectangular prisms."

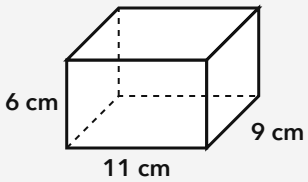
NAME _____ DATE _____

OUTSIDE OR INSIDE

Surface area is the total area covering the outside of a solid. A rectangular prism has three pairs of equal faces, so its surface area is 2 × (l × w + l × h + w × h). Its volume is l × w × h, the amount of space inside.

WORKED EXAMPLE

Find the surface area of the prism shown.

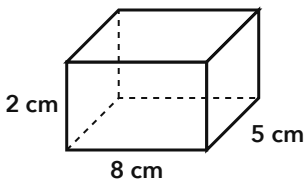


1. Find the three different face areas: 11 × 9 = 99, 11 × 6 = 66, and 9 × 6 = 54.
2. Count each face and its matching face: 2 × (99 + 66 + 54).
3. 2 × 219 = 438.

Answer: 438 cm²

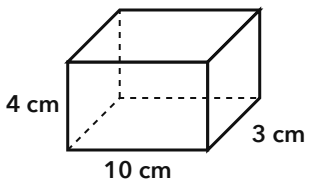
PRACTICE 6 problems

1 Find the surface area of the prism shown.



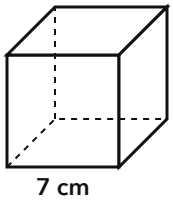
ANSWER _____

2 Find the volume of the prism shown.



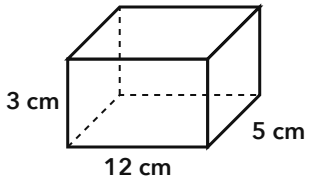
ANSWER _____

3 Find the surface area of the cube shown.



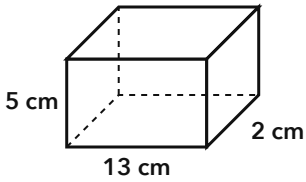
ANSWER _____

4 Find the surface area of the prism shown.



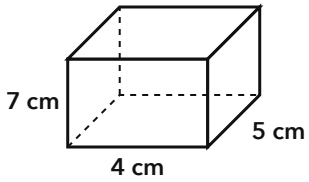
ANSWER _____

5 Find the volume of the prism shown.



ANSWER _____

6 Find both the surface area and the volume of the prism shown.

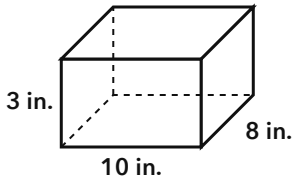


ANSWER _____

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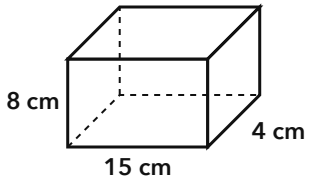
APPLY IT Show your work

1 You are wrapping the closed gift box shown. How many square inches of paper would cover every face, with no overlap?



ANSWER _____

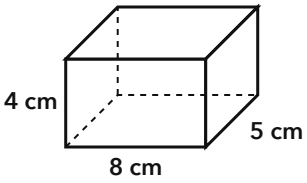
2 A game-card organizer has the inside dimensions shown. What volume of cards can it hold?



ANSWER _____

CHALLENGE One step up

Two blocks like the one shown are joined to make a new block twice as long. What is the surface area of the new block? Explain how you found it.



WORK SPACE AND ANSWER

ANSWER KEY

Cover or Fill?

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the surface area of the prism shown.	**132 cm^2**
2	Find the volume of the prism shown.	**120 cm^3**
3	Find the surface area of the cube shown.	**294 cm^2**
4	Find the surface area of the prism shown.	**222 cm^2**
5	Find the volume of the prism shown.	**130 cm^3**
6	Find both the surface area and the volume of the prism shown.	**Surface area: 166 cm^2; volume: 140 cm^3**

PART 2 · APPLY IT

1. **268 $in.^2$** Add the areas of each pair of faces: 2 × (10 × 8 + 10 × 3 + 8 × 3) = 268.
2. **480 cm^3** Multiply the inside dimensions: 15 × 4 × 8 = 480.

CHALLENGE

328 cm^2. The new prism is 16 cm long, 5 cm wide, and 4 cm high. Its surface area is 2 × (16 × 5 + 16 × 4 + 5 × 4) = 328 cm^2.

Accept equivalent calculations with correct square or cubic units. For the challenge, also accept adding the blocks' surface areas and subtracting the two joined faces.