Name_____ Date_____ Period_____

LESSON 5-7 · SESSION 1 · PRACTICE · FORM A

Surface Area of Rectangular Prisms

Learning target – I can find the surface area of a rectangular prism by adding the areas of its six faces. · 6.G.A.4

REMEMBER

- **Surface area** is the total area of all the faces, in **square units**.
- A rectangular prism has **3 pairs** of matching faces: **SA = 2lw + 2lh + 2wh**.
- A cube has 6 matching faces: SA = 6 × (edge × edge). Open top? Leave that face out.

WORKED EXAMPLE

A closed box is 6 cm × 4 cm × 3 cm.

Step 1 Faces: 6 × 4 = 24, 6 × 3 = 18, 4 × 3 = 12.

Step 2 Double each: 48, 36, 24.

Step 3 Add: 48 + 36 + 24 = 108.

Answer **SA = 108 cm²**

WORDS **surface area** *(área superficial)* · **face** *(cara)* · **congruent** *(congruente)*

PRACTICE

show your work · label units

1. Find the surface area of each solid.

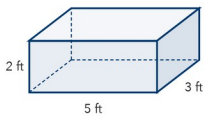
a. cube, edges 8 cm ___ cm²

b. prism 9 cm × 6 cm × 4 cm ___ cm²

c. prism 10 in × 5 in × 3 in ___ in²

d. cube, edges 6 m ___ m²

2. **Toy Chest.** James stains the whole outside of this chest. One can covers 20 ft².



a. Top, front, and end faces _____

b. Surface area _____ ft²

c. Cans of stain needed _____

Show your work.

3. **Gift Wrap.** Kai wraps a box 12 in by 10 in by 7 in. How much paper covers it?

Hint *Find three faces, then double each.*

Show your work.

Answer_____ in²

4. **Two Cubes.** Cube A has 5 cm edges. Cube B has 7 cm edges. Both are covered in foil.

a. SA of Cube A _____ cm²

b. SA of Cube B _____ cm²

Show your work.

5. Moving Crate. A closed crate is 8 ft by 6 ft by 3 ft. Find its surface area.

Show your work.

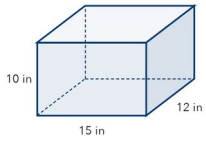
Answer_____ ft²

6. Tessa's Cube. A cube has 12 in edges. Tessa says its surface area is 144 in². Is Tessa right?

Show your work.

Answer_____ in²

7. Shipping Carton. A closed shipping carton is 15 in long, 12 in wide, and 10 in tall. Find its surface area.



Hint *Every face has a matching face on the opposite side.*

Show your work.

Answer_____ in²

8. Painting a Crate. A crate is 8 ft long, 5 ft wide, and 4 ft tall. One can of paint covers 40 ft².

Hint *Round up: part of a can is still a whole can.*

a. Find the surface area. _____ ft²

b. How many cans paint all six faces? _____

c. No paint on the bottom: new area and cans _____

Show your work.

FIND THE ERROR

explain the mistake, then fix it

9. Jonah's Work. A box is 10 cm long, 7 cm wide, and 5 cm tall. Jonah wrote: "Surface area = 10 × 7 × 5 = 350 cm²." Explain the mistake and find the surface area.

_____

_____

_____

TEST PRACTICE

choose the best answer

10. A cube with 4 cm edges has a surface area of –

A 16 cm² **B** 64 cm² **C** 96 cm² **D** 24 cm²

11. How many pairs of matching faces does a rectangular prism have?

A 2 **B** 3 **C** 4 **D** 6

SELF-CHECK CODE *find your answer · copy its letter into that problem's box · spell a math word*

548 U	274 Q	1,800 Z	900 C	180 F	144 S	150 R	62 S	184 E	864 A

#2b	#3	#4a	#5	#6	#7	#8a	#8c

CHECK YOURSELF	□ I can do this on my own	□ I need a little help	□ I have a question about #___