

Name: _____

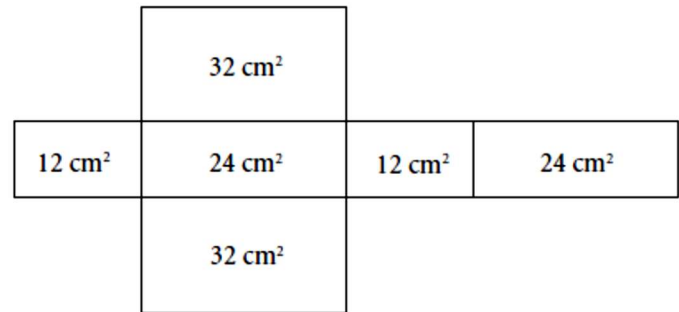
Date: _____

Math 8

Lesson M2 Part 1 ~ Calculating Surface Area of Right Rectangular Prisms

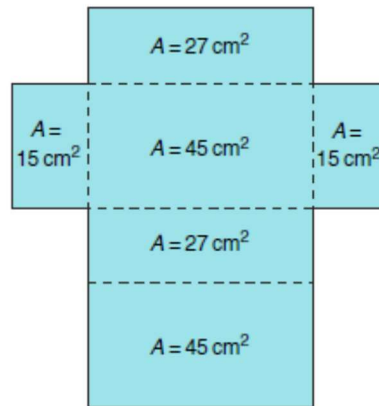
- Developing:

- The diagram shows the net of a right rectangular prism. The area of each face is given. Calculate the surface area of the prism.

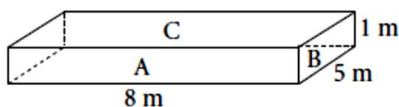


Area = _____ + _____ + _____ + _____ + _____ + _____ = _____ cm^2

- Here is the net of a right rectangular prism. The area of each face is given. What is the surface area of the prism?



- Determine the surface area of the rectangular prism.



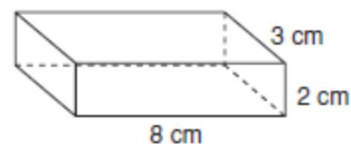
Rectangle A has area _____ \times _____ = _____

Rectangle B has area _____ \times _____ = _____

Rectangle C has area _____ \times _____ = _____

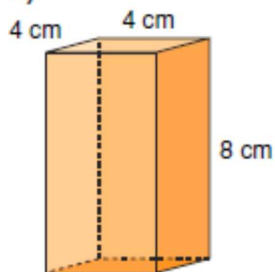
Surface area = $2 \times$ _____ + $2 \times$ _____ + $2 \times$ _____
= _____

- Sketch a net of this right rectangular prism. What is its surface area?

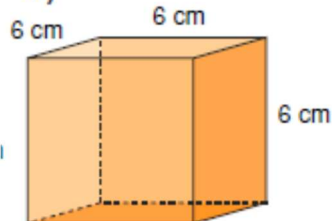


6. Find the surface area of each right rectangular prism.

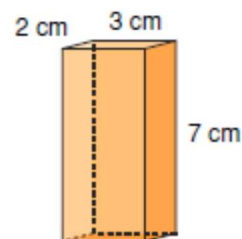
a)



b)



c)



• Proficient:

7. Find the surface area of a right rectangular prism with these dimensions.

a) 4 m by 3 m by 10 m

b) 3 cm by 5 cm by 8 cm

9. Tanya paints the walls of her family room. The room measures 7 m by 4 m by 3 m.

The walls need 2 coats of paint.

A 4-L can of paint covers 40 m^2 .

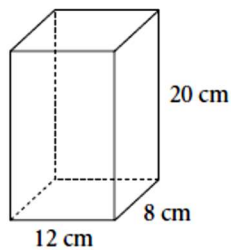
a) How much paint should Tanya buy?

b) What assumptions do you make?

Explain.

3. Glenda and Louis each design a rectangular package.
Whose package has the greater surface area? Show your work.

Glenda's package:

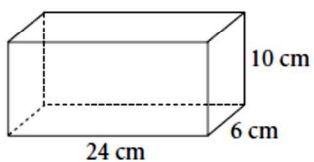


$$SA = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

Louis's package:



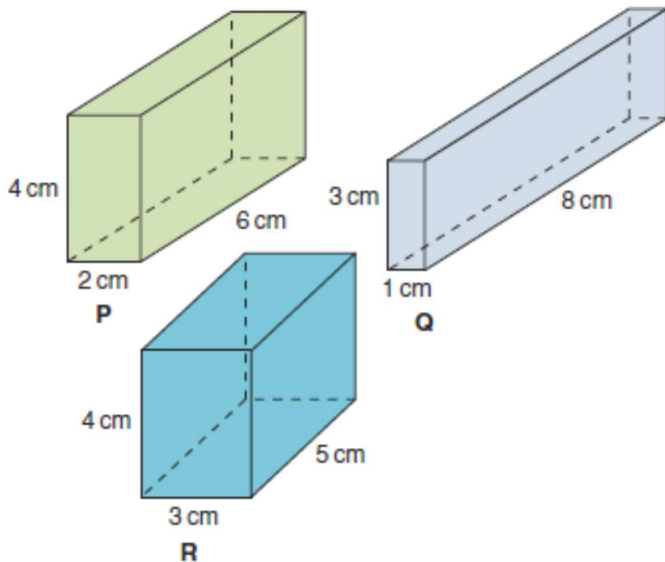
$$SA = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

$\underline{\hspace{2cm}} > \underline{\hspace{2cm}}$ So, $\underline{\hspace{2cm}}$ package has the greater surface area.

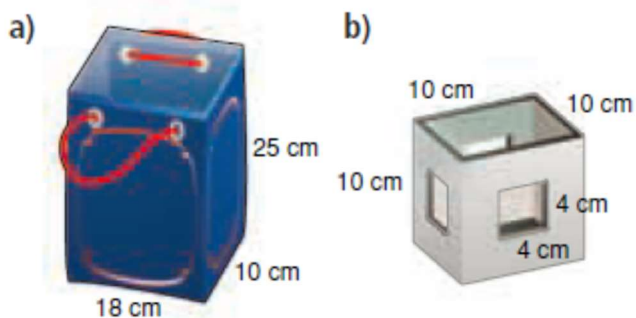
13. Which prism has the greatest surface area? The least surface area?



- Extending:
- 4.** The surface area of a cube is 294 cm^2 .
- a) What is the area of each face of the cube?

 - b) What is the length of one edge of the cube?
- 10.** The surface area of a cube is 54 cm^2 .
- a) What is the area of one face of the cube?
 - b) What is the length of one edge of the cube?
- 5.** An office building is in the shape of a right rectangular prism with height 200 m, length 60 m, and width 40 m. The top quarter of each vertical face of the building is to be covered with a large banner advertising a major sporting event. What is the total surface area to be covered with banners?
- 12.** The Sandberg Institute building in Amsterdam generates revenue by selling advertising space on the exterior of the building. The building is a rectangular prism with dimensions 50 m by 40 m by 75 m. Suppose it costs 1 Euro per month to rent an advertising space of 50 cm^2 . Each of the 4 walls of the building is covered with advertisements. How much money will the institute earn in one month?

- 15.** Each object has the shape of a rectangular prism, but one face or parts of faces are missing. Find each surface area.



- 16. Take It Further** A right rectangular prism has a square base with area 4 m^2 . The surface area of the prism is 48 m^2 . What are the dimensions of the prism?

- 17. Take It Further** A right rectangular prism has faces with these areas: 12 cm^2 , 24 cm^2 , and 18 cm^2 . What are the dimensions of the prism? How did you find out?