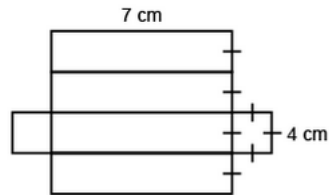


# Lesson 3 Assessment

## Determining the Surface Area of Rectangular Prisms

### Determining the Surface Area of Prisms

Uses nets to calculate surface area by adding the partial areas



I added the partial areas.

Area of rectangle:

$$7 \text{ cm} \times 4 \text{ cm} = 28 \text{ cm}^2$$

Area of 4 rectangles:

$$4 \times 28 \text{ cm}^2 = 112 \text{ cm}^2$$

Area of square:

$$4 \text{ cm} \times 4 \text{ cm} = 16 \text{ cm}^2$$

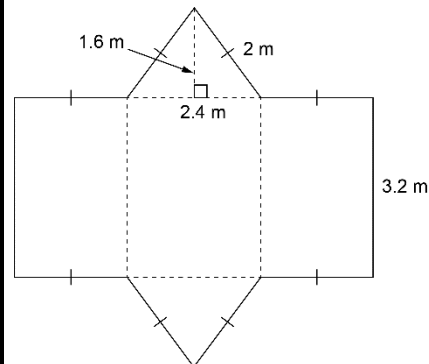
Area of 2 squares:

$$2 \times 16 \text{ cm}^2 = 32 \text{ cm}^2$$

Surface area of right prism:

$$112 \text{ cm}^2 + 32 \text{ cm}^2 = 144 \text{ cm}^2$$

Uses nets to show relationship between areas of faces and surface area of right prisms

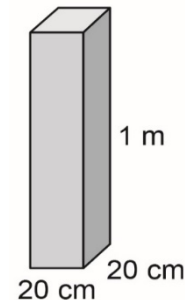


Surface area of right triangular prism

$$\begin{aligned} &= \text{area of 2 congruent triangles} + \\ &\quad \text{area of 2 congruent rectangles} + \\ &\quad \text{area of third rectangle} \\ &= 2(2.4 \times 1.6 \div 2) + 2(3.2 \times 2) \\ &\quad + 3.2 \times 2.4 \\ &= 3.84 + 12.8 + 7.68 \\ &= 24.32 \end{aligned}$$

The surface area is 24.32 m<sup>2</sup>.

Determines surface area by visualizing net and adding the areas of its faces



The prism has 2 congruent square bases and 4 congruent rectangular faces.

Convert 1 m to 100 cm.

Surface area of rectangular prism =

$$2(20 \times 20) + 4(20 \times 100)$$

$$= 800 + 8000$$

$$= 8800$$

The surface area is 8800 cm<sup>2</sup>.

Solves problems involving surface area of right prisms

The dimensions of a rectangular gift box are 8 cm by 7 cm by 9 cm. How much wrapping paper is needed for this gift?

Surface area of right rectangular prism

$$= 2(8 \times 7) + 2(8 \times 9) + 2(7 \times 9)$$

$$= 112 + 144 + 126$$

$$= 382$$

The surface area is 382 cm<sup>2</sup>. You would need 382 cm<sup>2</sup> of wrapping paper without overlap.

### Observations/Documentation