Lesson 6 Reteach

Surface Area of Prisms

The sum of the areas of all the surfaces, or faces, of a three-dimensional shape is the surface area. The surface area S.A. of a rectangular prism with length ℓ , width w, and height h is the sum of the areas of its faces.

$$S.A. = 2\ell w + 2\ell h + 2wh$$

Example

Find the surface area of the rectangular prism.

Faces	Area
top and bottom	$2\ (4\boldsymbol{\cdot} 3)=24$
front and back	$2(4 \cdot 2) = 16$
two sides	$2\ (2\boldsymbol{\cdot} 3)=12$
sum of the areas	24 + 16 + 12 = 52
Alternatively, replace ℓ with 4, w with 3,	

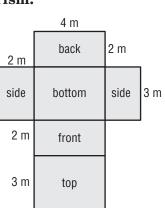
and h with 2 in the formula for surface area.

$$S.A. = 2\ell w + 2\ell h + 2wh$$

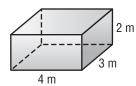
$$= 2(4 \cdot 3) + 2(4 \cdot 2) + 2(3 \cdot 2)$$

$$= 24 + 16 + 12$$

$$= 52$$



4 m

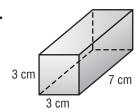


So, the surface area of the rectangular prism is 52 square meters.

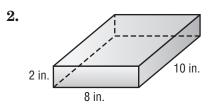
Exercises

Find the surface area of each prism.

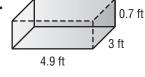
1.



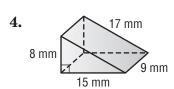
63cm



160in



30ft



153mm