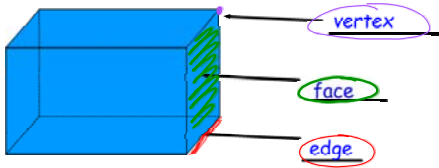


Notes for page 11.01

Objective: Identify the parts of a prism



Number of vertices 8

Number of faces 6

Number of edges 12

Generalize the Formula

Teacher's Notes 1

Teacher's Notes 2

Solution

What is the volume of the box?

Number of cubes in one layer: $16 \times 8 = 128 \text{ u}^2$

Number of layers: 6

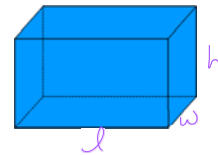
Therefore, volume of the box: $128(6) = 768 \text{ u}^3$

Volume of the box = length \times width \times height
= base area \times height

Surface Area of a Rectangular Prism

Rectangular prism
3 D and corresponding net

You know how to find the area of each face. You know how many congruent faces there are. So how do you find the surface area of the entire rectangular prism?

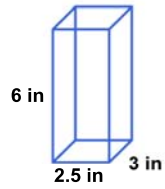


your hypothesis

$$\underline{2wl + 2lh + 2wh}$$

erase to check

Find the volume and surface area of this rectangular prism



V =

$$V = 45 \text{ in}^3$$

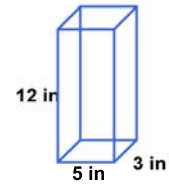
$$(6)(2.5)(3)$$

SA =

$$SA = 81 \text{ in}^2$$

$$2((2.5)(6) + (3)(6) + (2.5)(3))$$

Find the volume and surface area of this rectangular prism

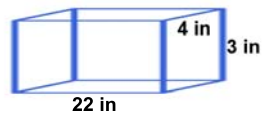


$$V = lwh = 5(3)(12) = 180 \text{ in}^3$$

$$SA = 2(5)(3) + 2(3)(12) + 2(5)(12)$$

$$= 30 + 72 + 120 = 222 \text{ in}^2$$

Find the volume and surface area of this rectangular prism



V =

 in³

$$V = lwh = 22(3)(4) = 264 \text{ in}^3$$

SA =

 in²

$$SA = 2(22)(3) + 2(22)(4) + 2(3)(4)$$

$$= 132 + 176 + 24$$

$$= 332 \text{ in}^2$$