



Practice

7.2 Surface Area and Volume of Prisms

Find the volume of a prism with the given dimensions.

1. $B = 40 \text{ in.}^2, h = 5 \text{ in.}$

200 in.^3

2. $B = 16 \text{ m}^2, h = 6 \text{ m}$

96 m^3

3. $B = 19 \text{ cm}^2, h = 84 \text{ cm}$

1596 cm^3

4. $B = 12 \text{ ft}^2, h = 8.2 \text{ ft}$

98.4 ft^3

5. $B = 14 \text{ cm}^2, h = 10 \text{ cm}$

140 cm^3

6. $B = 16 \text{ ft}^2, h = 8 \text{ ft}$

128 ft^3

Find the surface area and volume of a right rectangular prism with the given dimensions.

7. $\ell = 14, w = 2, h = 15$

$S = 536; V = 420$

8. $\ell = 3, w = 6, h = 2.5$

$S = 81; V = 45$

9. $\ell = 10, w = 14, h = 4$

$S = 472; V = 560$

10. $\ell = 2.5, w = 3, h = 5.5$

$S = 75.5; V = 41.25$

11. $\ell = 6.5, w = 2.5, h = 10$

$S = 212.5; V = 162.5$

12. $\ell = 15, w = 8, h = 20$

$S = 1160; V = 2400$

13. Find the height of a rectangular prism with a surface area of 560 ft^2 and a base of $7 \text{ ft} \times 8 \text{ ft}$.

14.9 ft

14. Find the surface area of a right rectangular prism with a height of 6 in. The sides of the base measure 2 in.

56 in.^2

15. A leaning stack of playing cards in the shape of an oblique prism has the same volume as an upright stack of the same height. This is an example of _____.

$Cavalieri's Principle.$

16. One right prism has triangular bases with base and altitude lengths 12 and $9\sqrt{3}$, respectively. Another oblique prism has regular hexagonal bases with side lengths of 6. If the height of both prisms is 17, do they have equal volumes?

$yes, 918\sqrt{3} \text{ cubic units}$