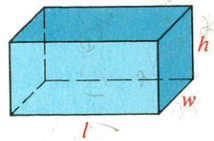
Written Exercises

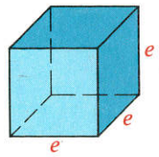
Exercises 1–6 refer to rectangular solids with dimensions l, w, and h. Complete the table.

	l	w	h	L.A.	T.A.	V
A **1.**	6	4	2	?	?	?
2.	50	30	15	?	?	?
3.	6	3	?	?	?	54
4.	?	8	5	?	?	360
5.	9	?	2	60	?	?
6.	$5x$	$4x$	$3x$	?	?	?



Exercises 7–12 refer to cubes with edges of length e. Complete the table.

	7.	**8.**	**9.**	**10.**	**11.**	**12.**
e	3	6	?	?	?	$2x$
T.A.	?	?	?	?	150	?
V	?	?	1000	64	?	?



13. If the edge of a cube is doubled, the total area is multiplied by ___?___ and the volume is multiplied by ___?___.

14. Find the lateral area of a right pentagonal prism with height 13 and base edges 3.2, 5.8, 6.9, 4.7, and 9.4.

Facts about the base of a right prism and the height of the prism are given. Sketch each prism and find its lateral area, total area, and volume.

15. Equilateral triangle with side 8; $h = 10$

16. Triangle with sides 9, 12, 15; $h = 10$

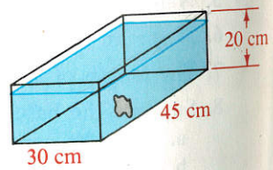
B **17.** Isosceles triangle with sides 13, 13, 10; $h = 7$

18. Isosceles trapezoid with sides 10, 5, 4, 5; $h = 20$

19. Regular hexagon with side 8; $h = 12$

20. Rhombus with diagonals 6 and 8; $h = 9$

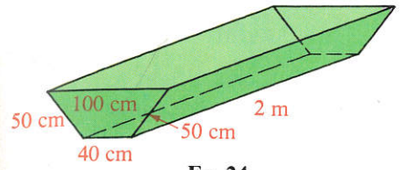
21. The container shown has the shape of a rectangular solid. When a rock is submerged, the water level rises 2 cm. Find the volume of the rock.



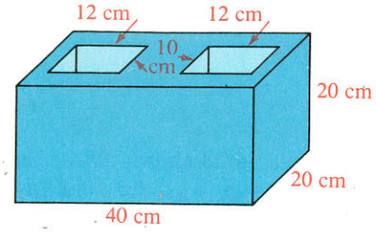
22. A driveway 30 m long and 5 m wide is to be paved with blacktop 3 cm thick. How much will the blacktop cost if it is sold at the price of $42 per cubic meter?

23. A brick with dimensions 20 cm, 10 cm, and 5 cm weighs 1.2 kg. A second brick of the same material has dimensions 25 cm, 15 cm, and 4 cm. What is its weight?

24. A drinking trough for horses is a right trapezoidal prism with dimensions shown below. If it is filled with water, how much will the water weigh? (1 m^3 of water weighs 1 metric ton.)



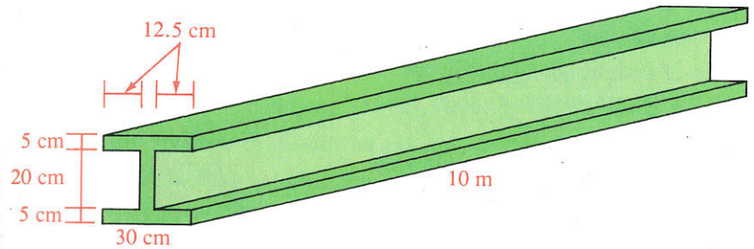
Ex. 24



Ex. 25

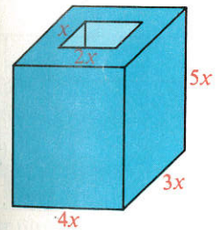
25. Find the weight of the cement block shown. Cement weighs 1700 kg/m^3.

26. Find the weight of the steel I-beam shown below. Steel weighs 7860 kg/m^3.

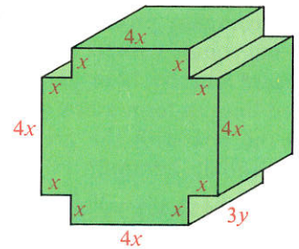


For Exercises 27 and 28 find the volume and total surface area of each solid in terms of the given variables.

27.



28.



29. The length of a rectangular solid is twice the width, and the height is three times the width. If the volume is 162 cm^3, what are the dimensions of the solid?