

****ALL WORK MUST BE DONE ON A SEPARATE SHEET OF PAPER****

Prisms and Pyramids

For use after Section 12-2

1. Find the lateral area, total area, and volume of a rectangular solid with length 7 cm, width 6 cm, and height 2 cm.

$$\text{L.A.} = \underline{\hspace{2cm}}, \text{ T.A.} = \underline{\hspace{2cm}}, V = \underline{\hspace{2cm}}$$

2. Find the lateral area, total area, and volume of a rectangular solid with length 3 m, width 1.2 m, and height 0.5 m.

$$\text{L.A.} = \underline{\hspace{2cm}}, \text{ T.A.} = \underline{\hspace{2cm}}, V = \underline{\hspace{2cm}}$$

3. Find the total area and volume of a cube with edge 5 cm.

$$\text{T.A.} = \underline{\hspace{2cm}}, V = \underline{\hspace{2cm}}$$

4. Find the lateral area of a right hexagonal prism with height 12 and base edges 3, 4, 5, 6, 5.2, and 6.3. _____

5. The total area of a cube is 216 cm^2 . Find the length of an edge. _____

6. The base of a right prism is a square with edge 4 cm. The volume is 64 cm^3 . Find the height. _____

7. A regular triangular pyramid has base edges 6 cm, 6 cm, and 6 cm and slant height 10 cm. Find its lateral area. _____

8. Find the volume of a regular hexagonal pyramid with base edge 8 cm and height 12 cm. _____

Sketch the prism with base and height as described. Find its lateral area, total area, and volume.

9. Triangle with sides 6, 8, 10; $h = 12$

$$\text{L.A.} = \underline{\hspace{2cm}}, \text{ T.A.} = \underline{\hspace{2cm}}, V = \underline{\hspace{2cm}}$$

10. Equilateral triangle with side 6; $h = 8$

$$\text{L.A.} = \underline{\hspace{2cm}}, \text{ T.A.} = \underline{\hspace{2cm}}, V = \underline{\hspace{2cm}}$$

Sketch each square pyramid. Then find its lateral area, total area, and volume.

11. base edge = 9, height = 6

$$\text{L.A.} = \underline{\hspace{2cm}}, \text{ T.A.} = \underline{\hspace{2cm}}, V = \underline{\hspace{2cm}}$$

12. height = 15, slant height = 25

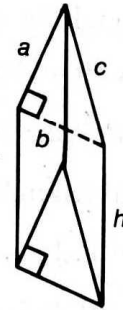
$$\text{L.A.} = \underline{\hspace{2cm}}, \text{ T.A.} = \underline{\hspace{2cm}}, V = \underline{\hspace{2cm}}$$

Practice 47

Important Solids

Complete the table for the right triangular prism shown.

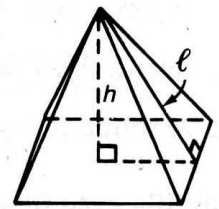
	a	b	c	h	L.A.	T.A.	V
1.	6	8		5			
2.		24	25	10			



Exs. 1-2

Complete the table for the regular square pyramid shown.

	base edge	lateral edge	l	h	L.A.	T.A.	V
3.	18	15					
4.			$5\sqrt{2}$	5			



Exs. 3-4

5. The height of a right prism is 10. Its base is an isosceles trapezoid with sides of lengths 10, 5, 10, and 17. Sketch the prism. Then find the lateral area, total area, and volume.

L.A. = _____

T.A. = _____

V = _____

6-11: Find the lateral area, total area, and volume of each of the following regular square pyramids using the information given.

- 6) Base edge of 7 cm and altitude of 9 cm.
- 7) Base edge of 8 cm and slant height of 5 cm.
- 8) Base edge of 10 cm and slant height of 13 cm.
- 9) Base edge of 24 cm and slant height of 15 cm.
- 10) Slant height of 10 cm and altitude of 6 cm.
- 11) Slant height of 17 cm and altitude of 15 cm.