

Chapter 5

Solids

Questions: 5.1–5.22

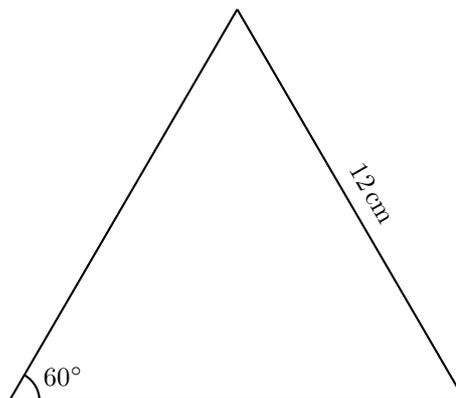
Concept : Square pyramid

- Q.5.1** To make a square pyramid of base 20 centimetres and slant height 24 centimetres, Bobby cut out a square and four isosceles triangles. What are the lengths of the sides of one such triangle?

Score : 3, Time : 5 minutes

Concept : Square pyramid

- Q.5.2** The figure shows some of the measures of a lateral face of the square pyramid Meenu made.

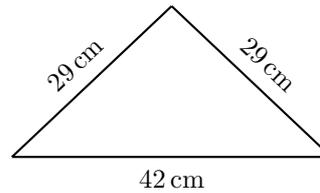
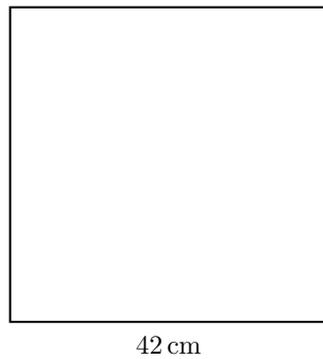


How long are the base edge and the slant height of the pyramid?

Score : 2, Time : 3 minutes

Concept : Square pyramid

- Q.5.3** The figures show that the square and one of the triangles Rabia cut out to make a square pyramid



Can she make a square pyramid with these? Explain the reason

Score : 3, Time : 5 minutes

Concept : Surface area of a square pyramid

Q.5.4 All edges of a square pyramid are of length 10 centimetres. Find its lateral surface area and surface area.

Score : 3, Time : 5 minutes

Concept : Surface area of a square pyramid

Q.5.5 Find the area of colored paper needed to cover a square pyramid of base edge 18 centimetres and lateral edge 41 centimetres.

Score : 4, Time : 5 minutes

Concept : Volume of a square pyramid

Q.5.6 A square pyramid is of base edge 24 centimetres and slant height 20 centimetres. Calculate its volume.

Score : 3, Time : 5 minutes

Concept : Volume of a square pyramid

Q.5.7 Ramya made a square pyramid of base edge 10 centimetres and height 6 centimetres. and Gopu made a square pyramid of base edge 5 centimetres and height 24 centimetres. Compute and compare their volumes.

Score : 3, Time : 4 minutes

Concept : Cone

Q.5.8 What are the radius and central angle of the sector needed to make a cone of base radius 9 centimetres and height 12 centimetres?

Score : 3, Time : 5 minutes

Concept : Volume of a square pyramid

Q.5.9 A circular metal sheet of radius 12 centimetres is cut into 6 equal sectors and bent into cones. Calculate the slant height and base radius of one such cone.

Score : 3, Time : 5 minutes

Concept : Surface area of a cone

Q.5.10 A sector of angle 120° is bent to form a cone. What is the ratio of the radius to the slant height of the cone? The curved surface area of such a cone is 108π square centimetres. What are its slant height and base radius?

Score : 4, Time : 6 minutes

Concept : Surface area of a cone

Q.5.11 A circle of radius 15 centimetres is cut into two sectors, What is the sum of their perimeters of their bases? What is the sum of the areas of their curved surfaces?

Score : 3, Time : 5 minutes

Concept : Surface area of a cone

Q.5.12 The base radius of a wooden cone is 30 centimetres and its height is 40 centimetres. What is its slant height? What would be the cost of painting 10 such cones, at the rate of 50 rupees per square metre?

Score : 5, Time : 8 minutes

Concept : Volume of a cone

Q.5.13 The base perimeter of a cone is 16π centimetres and its slant height is 17 centimetres. What is its height? Calculate its volume.

Score : 3, Time : 5 minutes

Concept : Volume of a cone

Q.5.14 A conical vessel of base radius 9 centimetres is used to fill a cylindrical can of base radius 12 centimetres and height 15 centimetres. The can was filled by 4 cones full. What is the height of the conical vessel?

Score : 4, Time : 7 minutes

Concept : Volume of a cone

Q.5.15 Neena and Sini made cones using sectors of radius 10 centimetres. Neena's sector had central angle 216° and Sini's sector had central angle 288° . Compute the volumes of both cones. What is the ratio of their volumes?

Score : 5, Time : 10 minutes

Concept : Volume of a sphere

Q.5.16 The edges of a cube are 24 centimetres long. Find the volume of the largest sphere that can be cut from it.

Score : 2, Time : 4 minutes

Concept : Surface area of a sphere

Q.5.17 What is the radius of a sphere of surface area 144π square centimetres?

Score : 3, Time : 4 minutes

Concept : Volume of a hemisphere

Q.5.18 The radii of two hemispheres are in the ratio 1 : 3. The volume of the smaller cone is 50 cubic centimetres. What is the volume of the larger one?

Score : 2, Time : 3 minutes

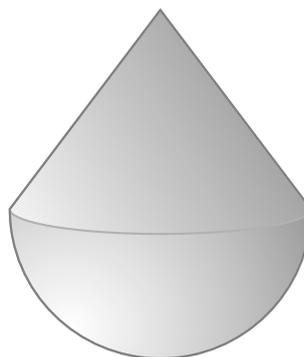
Concept : Comparison of volumes

Q.5.19 A metal sphere of radius 6 centimetres is melt and recast into a cone of base radius 6 centimetres. What is the height of the cone?

Score : 3, Time : 5 minutes

Concept : Comparison of volumes

Q.5.20 A solid is made by joining a hemisphere and cone of the same radius, as in the figure:



The radius of the hemisphere is 9 centimetres and the total height of the solid is 21 centimetres. What is the volume of the solid?

Score : 2, Time : 3 minutes

Concept : Volume of a hemisphere

Q.5.21 The diameter of a hemispherical vessel is 60 centimetres. How many litres of water can it contain?

Score : 2, Time : 4 minutes

Concept : Surface area of a sphere and hemisphere

Q.5.22 Two hemispheres of equal radius are joined to form a sphere. The surface area of each hemisphere is 120 square centimetres. What is the surface area of the sphere?

Score : 2, Time : 3 minutes