1 Questions

1.1 Group A

1. A square based solid pyramid has length of base 10 cm and slant height 13 cm.

   (a) Write the relation among vertical height, length of base and slant height of the pyramid.

   (b) Find the vertical height of the pyramid.

   (c) What is the volume of the pyramid?

   (d) If the pyramid is submerged in a cubical container having internal length 50 cm and filled with water, ho many litres of water will it displace?

2. A square based solid pyramid has length of base 14 cm and slant height 25 cm.

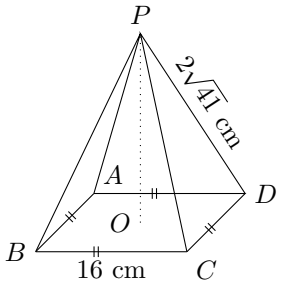
   (a) In a square based pyramid $l^2 = \left(\frac{a}{2}\right)^2 + h^2$, what does l represent?

   (b) Find the vertical height of the pyramid.

   (c) What is the volume of the pyramid?

   (d) If the pyramid is submerged in a cubical container having internal length 50 cm and filled with water, ho many litres of water will it displace?

3. In a solid square based pyramid, if the length of side of the base (BC) is 16 cm and the length of the lateral edge (PD) is $2\sqrt{41}$ cm,

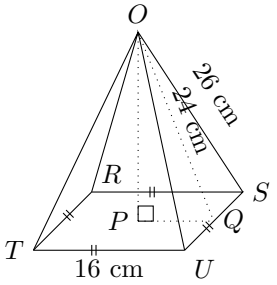
   (a) Find the volume of the pyramid.

   (b) Find the vertical height.

   (c) Write the formula to calculate slant height.

   (d) If the pyramid is submerged in a cubical container having internal length 30 cm and filled with water, how many milliliters of water will it displace?

4. A square based pyramid is shown in the adjoining figure.

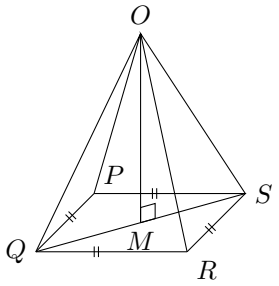
   (a) Find the measure of OP

   (b) Find the volume of the pyramid.

   (c) Find the measure of SQ

   (d) If the pyramid is submerged in a cubical container having internal length 30 cm and filled with water, how many milliliters of water will it displace?

5. A square based golden pyramid has $OS = 5$ cm and $OM = 4$ cm.

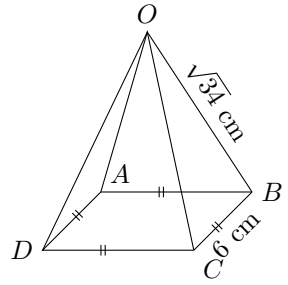
   (a) What is the measure of SM?

   (b) Find the area of base.

   (c) Find the volume of the pyramid.

   (d) Given that the weight of a solid unit cube of gold with side 1 cm is 20 gram, how many grams of gold was used in the given pyramid?

6. The given figure is a square based silver solid pyramid. If the side of the base of silver solid pyramid is 6 cm and the sloping edge of triangular surface(OB) = $\sqrt{34}$ cm,

   (a) Which formula is used to calculate the slant height?

   (b) Find the vertical height.

   (c) Find the volume of the pyramid.

   (d) Given that the weight of a solid unit cube of silver with side 1 cm is 18 grams, how many grams of silver was used in the given pyramid?

7. A carpenter made a wooden square based pyramid having slant height 10 cm and vertical height 8 cm.

   (a) How many faces are there in a square based pyramid?

   (b) Find the length of base side.

   (c) Find the total surface area of the pyramid.

   (d) What is the rate per square unit of painting the pyramid with golden color if the total cost of painting all the face is Rs 1920?

8. A carpenter made a wooden square based pyramid having slant height 61 cm and vertical height 60 cm.

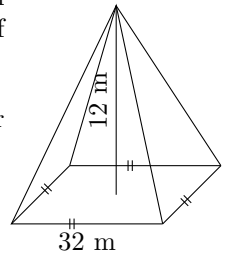
   (a) How many faces are there in a square based pyramid?

   (b) Find the length of base side.

   (c) Find the total surface area of the pyramid.

   (d) What is the rate per square unit of painting the pyramid with golden color if the total cost of painting all the face is Rs 15,840?

9. The diagram alongside is a tent of pyramid shape with square base. Each side of the base is 32 m and height of the pyramid is 12 m.



   (a) Which formula is used to calculate area of triangular surface?

   (b) Find the slant height.

   (c) Find the total surface area.

   (d) Compute the total cost of canvas required to make the tent at the rate of Rs 200 per square meter.

10. The diagram alongside is a tent of pyramid shape with square base. Each side of the base is 70 m and height of the pyramid is 12 m.

   (a) Which formula is used to calculate area of total surface?

   (b) Find the slant height.

   (c) Find the total surface area.

   (d) Compute the total cost of canvas required to make the tent at the rate of Rs 200 per square meter.

11. In the figure given, is a square based solid pyramid, whose vertical height and slant height are 16 cm and 20 cm respectively. Calculate the following values.

   (a) Find the length of shorter edge and length of longer edge.

   (b) Volume of the pyramid.

   (c) Lateral surface area of the pyramid.

   (d) Total surface area of the pyramid.

   (e) What is the difference in the cost of painting the total surface area and the lateral surface area of the pyramid at Rs 5 per sq. cm?

   (f) If a tin can is manufactured as shown in the figure, how many liters of water does it contain?

12. Find the area of the base and vertical height of a square based solid pyramid are 144 sq. cm and 8 cm respectively.

   (a) Find the volume.

   (b) What is the slant height?

   (c) What will be the total surface area of the pyramid? Find it.

   (d) Compare the longest edge and the shortest edge.