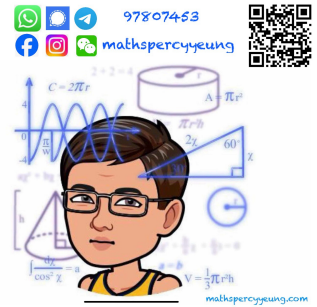


LTP F3 T7 Area and Volume



2017 – 2018

S.3 Mathematics Chapter Test 7

Question-Answer Book

Date: 22 – 1 – 2018

Duration: 45 mins

This paper must be answered in English

Instructions :

1. Write your name, class and class number in the spaces provided on this cover.
2. Answer ALL questions in this paper. Write your answers in the spaces provided in this Question-Answer Book.
3. Write your answers with black or blue ball-pens, and draw graphs or figures with HB pencils.
4. Unless otherwise specified, all working must be clearly shown.
5. **Unless otherwise specified, numerical answers should be either exact or correct to 3 significant figures.**
6. The diagrams in this paper are not necessarily drawn to scale.

Section A :

Multiple Choice Question

Question	Full marks	Score
1 – 8	16	
Section A Total	16	

Section B :

Conventional Question

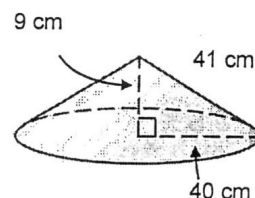
Question	Full marks	Score
9	6	
10	6	
11	7	
12	5	
Section B Total	24	

Paper Total	40	
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Section A : Multiple Choice Questions (16 marks)

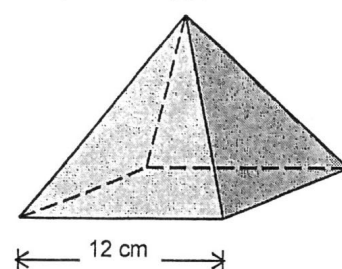
1. The figure shows a right circular cone of base radius 40 cm and height 9 cm. Its slant height is 41 cm. Find the volume of the cone in terms of π .

- A. $1080\pi \text{ cm}^3$
 B. $1640\pi \text{ cm}^3$
 C. $3240\pi \text{ cm}^3$
 D. $4800\pi \text{ cm}^3$



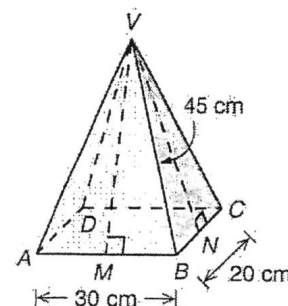
2. The height of the pyramid in the figure is 19 cm. Its base is a square of side 12 cm. Find the volume of the pyramid.

- A. 904 cm^3
 B. 912 cm^3
 C. 920 cm^3
 D. 2736 cm^3



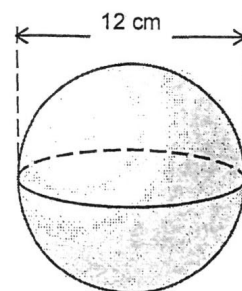
3. The figure shows a right pyramid $VABCD$ with a rectangular base $ABCD$. Find its total surface area correct to the nearest integer.

- A. 2750 cm^2
 B. 2850 cm^2
 C. 3000 cm^2
 D. 3300 cm^2



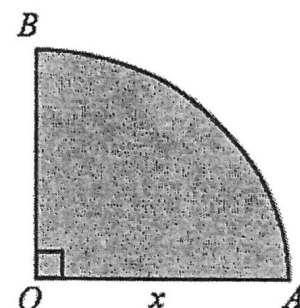
4. The diameter of a ball is 12 cm. Find the volume of the ball in terms of π .

- A. $72\pi \text{ cm}^2$
 B. $144\pi \text{ cm}^2$
 C. $288\pi \text{ cm}^2$
 D. $2304\pi \text{ cm}^2$



5. In the figure, a sector OAB of radius x is folded to form a right circular cone. Find the base radius of the cone.

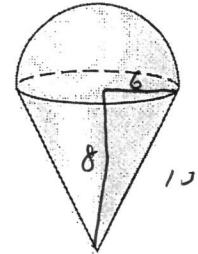
- A. $\frac{x}{2}$
 B. $\frac{x}{3}$
 C. $\frac{x}{4}$
 D. $\frac{x}{16}$



6. The radius of a hemisphere is 5 cm. Find its total surface area.

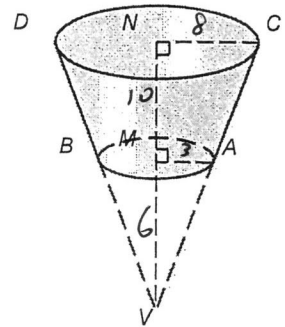
- A. $50\pi \text{ cm}^2$
- B. $75\pi \text{ cm}^2$
- C. $100\pi \text{ cm}^2$
- D. $125\pi \text{ cm}^2$

7. In the figure, the solid consists of a right circular cone and a hemisphere with a common base. The base radius and the height of the cone are 6 cm and 8 cm respectively. Find the total surface area of the solid.



- A. $120\pi \text{ cm}^2$
- B. $132\pi \text{ cm}^2$
- C. $204\pi \text{ cm}^2$
- D. $384\pi \text{ cm}^2$

8. The figure shows a bucket in the shape of a frustum of a right circular cone. The radii of the upper base and the lower base are 8 cm and 3 cm respectively. It is given that $VM = 6 \text{ cm}$ and $MN = 10 \text{ cm}$. Find the volume of the bucket.



(Give your answers correct to 3 significant figures.)

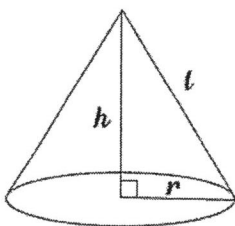
- A. 820 cm^3
- B. 920 cm^3
- C. 1020 cm^3
- D. 1120 cm^3

Section B : Conventional Questions (24 marks)

9. In each of the following figures, write down the formula.

(6 marks)

(a)

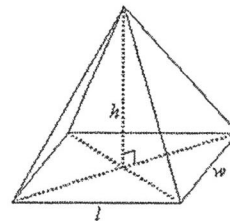


Volume of right circular cone = _____

Curved surface area of the cone = _____

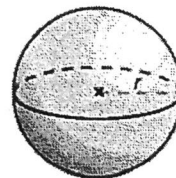
Total surface area of the cone = _____

(b)



Volume of pyramid = _____

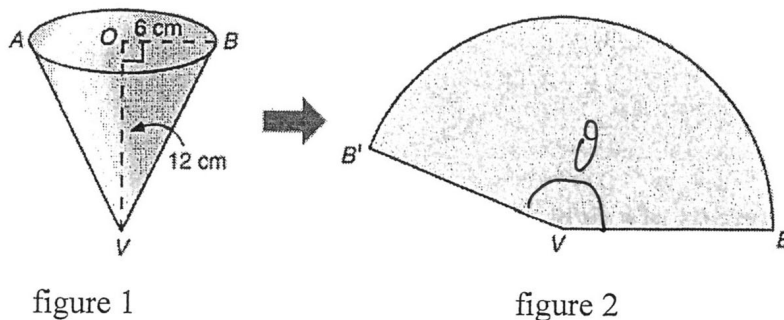
(c)



Volume of a sphere = _____

Surface area of a sphere = _____

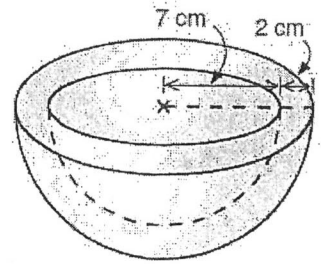
10. The figure shows an inverted right conical vessel. It is cut along BV to form a sector VBB' .



- (a) Find the area of the sector in figure 2 in terms of π .
- (b) Find the angle of the sector in figure 2. (Give your answers correct to 1 decimal place.)
- (6 marks)

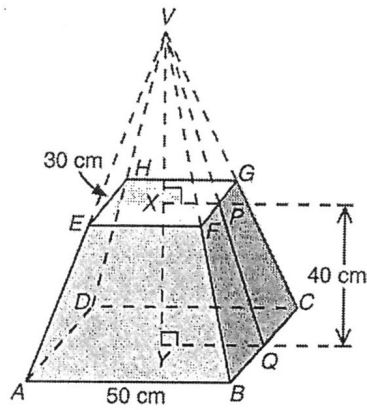
11. In the figure, a hemispherical container is made of clay. The uniform thickness and the inner radius of the container are 2 cm and 7 cm respectively.

- (a) Find the capacity of the container.
 - (b) Find the volume of the clay.
 - (c) Find the total surface area of the clay.
- (Give your answers in terms of π .)



(7 marks)

12. The figure shows a frustum $EFGHDABC$. Both the upper base and the lower base of the frustum are squares.



- (a) Find the height of pyramid $VEFGH$.
 (b) Find the volume of the frustum.
 (Give your answers correct to 1 decimal place if necessary.)

(5 marks)

– END OF PAPER –