



MATHS

BOOKS - NAND LAL PUBLICATION

VISUALISING SOLID SHAPES

Exercise 101

1. For each of the given solid, the two views are given. Match for each solid the corresponding top and front views. This first one is done for

you.



2. For each of the given solid, the three views are given. Identify for each solid the corresponding top, front and side views.





3. For each given solid, identify the top view,

front view and side view.



4. Draw the front view nad top view of the given objects.







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Exercise 10 2

1. Look at the given map of a city



Answer the following :

Colour the map as follows : Blue-Water, Red-



2. Look at the given map of a city



Answer the following :

Marks green 'X' at the intersection of Road C

and Nehru Road, Green 'Y' at the intersection

of Gandhi Road and Road A



3. Look at the given map of a city



Answer the following :

In red, draw a short street route from library

to the bus depot.



Answer the following :

Which is further east, the city park or the

market? from library to bus depot



Answer the following :

Which is further south, the primary school or

the Sr. Secondary School? from library to bus

depot



6. Draw a map of your class room using proper

scale and symbol for different objects.

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7. Draw a map of your school compound using proper scale and symbols for varius features

like play ground main building,garden etc.



8. Draw a map giving instructions to your friend so that she reaches your house wiothout any difficulty.

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Exercise 10 3

1. Can a polyhedron have for its faces: 3 triangles?

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2. Can a polyhedron have for its faces: 4 triangles?

3. Can a polyhedron have for its faces: a square and four triangles?
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4. Is it possible to have a polyhedron with any given number of faces? (Hint: Think of a pyramid).





8. Which are prisms among the following :



9. How are prisms and cylinders alike?



12. verify Euler's formula for these solids:





13. Using Euler's formula find the unknown.

Faces	?	5	20
Vertices	6	· ?	12
Edges	12	9	?

F = ?, V = 6, E = 12

14. Using Euler's formula find the unknown.

Faces	?	5	20
Vertices	6	· ?	12
Edges	12	9	?

$$F = 5, V = ?, E = 9$$

15. Using Euler's formula find the unknown.

Faces	?	5	20
Vertices	6	?	12
Edges	12	9	?

F = 20, V = 12, E = ?

16. Can a polyhedron have 10 faces, 20 edges

and 15 vertices?

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Additional Questions For Practice Objective Type Questions

1. Fill in the blanks.

A _____ depicts the location of a particular object or a place in relation to other objects

or places.



4. Fill in the blanks.

•

3-D shape made up of only polygon is called



5. Fill in the blanks.

Lateral faces of the triangular prism are

6. Fill in the blanks.

Cylinder has _____ faces.



7. Answer the multiple choice questions.

A cube is a

A. 2-D shape

B. Pyramid

C. Prism

Answer: Prism



8. Answer the multiple choice questions.

Which is a 2-dimcnsional figure

A. Cylinder

B. Sphere

C. Circle

Answer: Circle



9. Answer the multiple choice questions.

A solid having 5 faces, 5 vertices and 8 edges is

A. Square pyramid

B. triangular pyramid

C. Triangular prism

Answer: Square pyramid



10. Which of the following is the Euler's Formula?

A. F + V - E = 2

 $\mathsf{B}.\,F+E-V=2$

 $\mathsf{C}.\,F-V-E=2$



11. Answer the multiple choice questions.

The point where 3 faces of a figure meet is called its

A. Vertex

B. edge

C. angle

Answer: edge



12. Answer the multiple choice questions.

The number of faces in a triangular prism are

A. 5

B. 4

C. 3



14. State whether true or false.

For a polyhedron F+V-E=2 is called Euler's formula.



15. State whether true or false.

If we give a vertical cut to a circular cone, the

cross section received is rectangle.

16. State whether true or false.



adjoining figure represent the net of cube



17. State whether true or false.

The side of view

of



circle.

19. Draw the solid shapes whose nets are given



20. Draw the solid shapes whose nets are

given





21. Draw the solid shapes whose nets are given





22. Draw the solid shapes whose nets are given





23. Match the following :

- (a) Tetrahedron
- (b) Square pyramid
- (c) Triangular prism
- (d) Cube
- (e) Cuboid

- 6 vertices
 - 6 faces
 - 12 edge
 - 6 edges
 - 5 faces



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24. Add the face that is needed to make the

net of the following-





Additional Questions For Practice Short Answer Type Questions

1. Make the front side and top view of



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2. Polyhedron has 7 faces and 15 edges. How

many vertices does this polyhedron have



3. What is a polyhedron? How can we say that polyhedron is a regular polygon. Draw one figure of convex polyhedron and concave polyhedron.



4. Name the two important members of the polyhedron. Draw figures and differentiate them.



1. What change will be observed in the number

of faces, edges and vertices of a cube if

One of its corner is sliced.

Two of its corner are sliced.





Sample Paper For Practice

1. Fill in the blanks.

Prism is a polyhedron whose top and base are



	2.	Fill	in	the	b	lan	ks.
--	----	------	----	-----	---	-----	-----

Base of a triangular pyramid is _____.

Match	Video	Co	lution
	video	20	IULION

3. Fill in the blanks.

Triangular pyramid is called a _____.

4. Fill in the blanks.

Lateral faces of a cube are _____.

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5. Answer the multiple choice questions.

Which of the following pairs of fractions are

not equivalent

A. match box

B. ball

C. pyramid

D.

Answer: ball



6. Answer the multiple choice questions.

Lateral faces are parallelograms in

A. Prism

B. Pyramid

C. Pentagon

D.

Answer: Prism



7. Answer the multiple choice questions.

The front view of an object is sqµare. The object may be a.

A. Cube

B. Cuboid

C. Cone

D.

Answer: Cube

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8. Answer the multiple choice questions.

Minimum value of vertices at polyhedron is

B. 5

C. 6

D.

Answer: 4

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9. State whether True or False.

Triangular pyramid is a regular polyhedron.

10. State whether True or False.

All prisms and pyramids are polyhedron.



11. State whether True or False.

3-D objects have same view from different position.

12. State whether True or False.

Maps involve a scale which is not fixed for a

particular map.



13. Is it possible to have a polyhedron with any given number of faces? (Hint: Think of a pyramid).



14. Give an example of each of the following :

Cube



15. Give an example of each of the following :

Cuboid

16. Give an example of each of the following :

Cylinder'

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17. Give an example of each of the following :

Prism



18. Give an example of each of the following :

Pyramid

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19. Give an example of each of the following :

Cone





21. A polyhedron has 6 vertices and 12 edges.

How many faces does this polyhedron have?

22. Make the front, side and top view of the

figure.



23. Find the number of faces, edges and vertices of the following polyhedron

Triangular prism

24. Find the number of faces, edges and vertices of the following polyhedronTriangular pyramid

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25. Can a polyhedron have 10 faces, 15 edges

and 20 vertices, verify using Euler's formula.

26. Identify figure given below are

polyhedrons.





27. Identify figure given below are

polyhedrons.





28. Identify figure given below are polyhedrons.



polyhedrons.



View Text Solution



1. Match the following

Shape	Type of Shape	Name of the Shape	
	3-dimensional	Sphere	
\triangle	2-dimensional	Cylinder	
	3-dimensional	Square	
\triangle	2-dimensional	Circle	
	3-dimensional	Cuboid	
· ()	3-dimensional	Cube	
	2-dimensional	Cone	
	3-dimensional	Triangle	

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2. Match the following picture (objects) with their shapes.

2	Picture		Shape
(i)	An agricultural field		Two rectangular cross paths inside a rectangular park
(ii)	A grove		A circular path around a circular ground.
(111)	A toy		A triangular field adjoining a square field.
(iv)	A circular park	0	A cone taken out of a cylinder.
(v)	A cross path	ine-statester	A hemisphere surmounted on a cone,



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3. Observe different things around you from

different positions. Discuss your friends their

various views.



4. Look at the following map of a city.



Colour the map as follows : Blue-Water, Redfire station, Orange-Library, Yellow-Schools, Green Parks, Pink-Community Centre, Purple-Hospital, Brown-cemetery.



5. Look at the following map of a city.



Mark a Green 'X' at the intersection of 2nd street and Denim street. A Black 'Y' where. the river meets the third street. A red 'Z' at the intersection of main street and 1st street.

6. Look at the following map of a city.



In magenta- colour, draw a short street route

from the college to the lake.



7. Draw a map of the route from your house to

your school showing important landmarks.



8. Tabulate the number of faces, edges and vertices from the following polyhedrons. (Here 'V' stands for the number of vertices, 'F' stands for number of faces, and 'E' stands for number of edges).

Solid	F	v	E	F+V	E+2
Cuboid					
Triangular pyramid					
Triangular prism					
Pyramid with square base			,		
Prism with square base	10		e statut orașe e	1	

What do you inter from the last two columns?

In each case, do you find F + V = E + 2 i.e.,

F + V - E = 2? This relationship is called Euler's formula. In fact this formula is true for any polyhedron.



1. A glass can have the following views.







Side view

Top view

Why is the top view of the glass a pair of concentric circles? Will the side view appear different if taken from some other direction? Think about this.



Think Discuss And Write

1. What happen to F, V and E. If some parts are

sliced off from a solid? (To start with you may

take a Plasticine cube, cut a corner off and

investigate).

