

Visualising Solid Shapes

Exercise 14.1

1.

i) A tent \rightarrow (g) A cone surmounted on a cylinder

ii) A tin \rightarrow (f) A cylindrical shell.

iii) A bowl \rightarrow (b) A hemispherical shell.

iv) An Agricultural field \rightarrow (a) A triangular field
adjoining a square field

v) A groove \rightarrow (h) A cone taken out of a cylinder

vi) A toy \rightarrow (d) A hemispherical surmounted on
a cone

vii) A circular park \rightarrow (e) A circular path around a
circular ground.

viii) A cross path \rightarrow (c) Two rectangular cross-paths
inside a rectangular park.

2.

(a) \rightarrow (iii) \rightarrow (y)

(b) \rightarrow (i) \rightarrow (v)

(c) \rightarrow (ii) \rightarrow (u)

(d) \rightarrow (vi) \rightarrow (x)

(e) \rightarrow (iv) \rightarrow (z)

(f) \rightarrow (v) \rightarrow (w)

3.





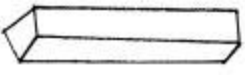


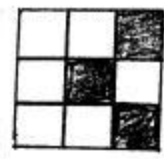






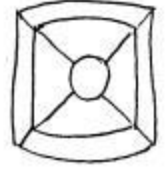



- (i) Side View
- (ii) Top View
- (iii) Front View

4.

- a) i) Front view (ii) Side View (iii) Top View
- b) i) Front view (ii) Top View (iii) Side View
- c) i) Top view (ii) Front View (iii) Side View
- d) i) Front view (ii) Side View (iii) Top View
- e) i) Side View (ii) Top view (iii) Front View
- f) i) Side View (ii) Front View (iii) Top View

~~g)~~5.

- a) i) Top view (ii) Side View (iii) Front View
- b) i) Side View (ii) Front View (iii) Top View
- c) i) Top view (ii) Side View (iii) Front View
- d) i) Side View (ii) Front View (iii) Top View
- e) i) Front view (ii) Top view (iii) Side View

	Front View	Side View	Top View
a)			
b)			
c)			
d)			
e)			
f)			

Exercise 17.2

1.

(i) No

(ii) Yes

(iii) Yes

2. only (ii), (iv) are prisms

3.

(i) Faces (F) = 7
Vertices (V) = 10
Edges (E) = 15

Euler's Formula

$$F + V = E + 2$$

$$7 + 10 = 15 + 2$$

$$17 = 17$$

\therefore Euler's formula is Verified.

(ii)

Faces (F) = 9
Vertices (V) = 9
Edges (E) = 16

Euler's formula

$$F + V = E + 2$$

$$9 + 9 = 16 + 2$$

$$18 = 18$$

\therefore Euler's formula is Verified.

(iii)

(B) Faces (F) = 7
 Vertices (V) = 7
 Edges (E) = 12

$$F + V = E + 2$$

$$7 + 7 = 12 + 2$$

$$14 = 14$$

∴ Euler's formula is verified

(iv)

Faces (F) = 9
 Vertices (V) = 9
 Edges (E) = 16

$$F + V = E + 2$$

$$9 + 9 = 16 + 2$$

$$18 = 18$$

∴ Euler's formula is verified.

4.

F = 15
 V = 20
 E = 30

∴ $F + V = 15 + 20 = 35$
 $E + 2 = 30 + 2 = 32$

$F + V \neq E + 2$

Violating Euler's formula

∴ Not possible

5.

$$F = 8$$

$$V = 8$$

Euler's formula

$$F + V = E + 2$$

$$8 + 8 = E + 2$$

$$16 = E + 2$$

$$E = 16 - 2$$

$$E = 14$$

$$\therefore \text{no. of edges} = 14$$

6.

$$F = 7$$

$$V = 10$$

Euler's formula

$$F + V = E + 2$$

$$7 + 10 = E + 2$$

$$17 = E + 2$$

$$E = 17 - 2$$

$$E = 15$$

$$\therefore \text{no. of edges} = 15$$

7.

(i) octahedral prism

$$\text{Faces (F)} = 10$$

$$\text{Vertices (V)} = 16$$

$$\text{Edges (E)} = 24$$

6

(i) Decagonal pyramid

$$\text{Faces (F)} = 11$$

$$\text{Vertices (V)} = 11$$

$$\text{Edges (E)} = 20$$

8.	Faces	Vertices	Edges
(i)	6	<u>8</u>	12
(ii)	<u>5</u>	5	8
(iii)	14	24	<u>36</u>
(iv)	<u>12</u>	16	30
(v)	16	<u>24</u>	42
(vi)	19	19	<u>36</u>

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