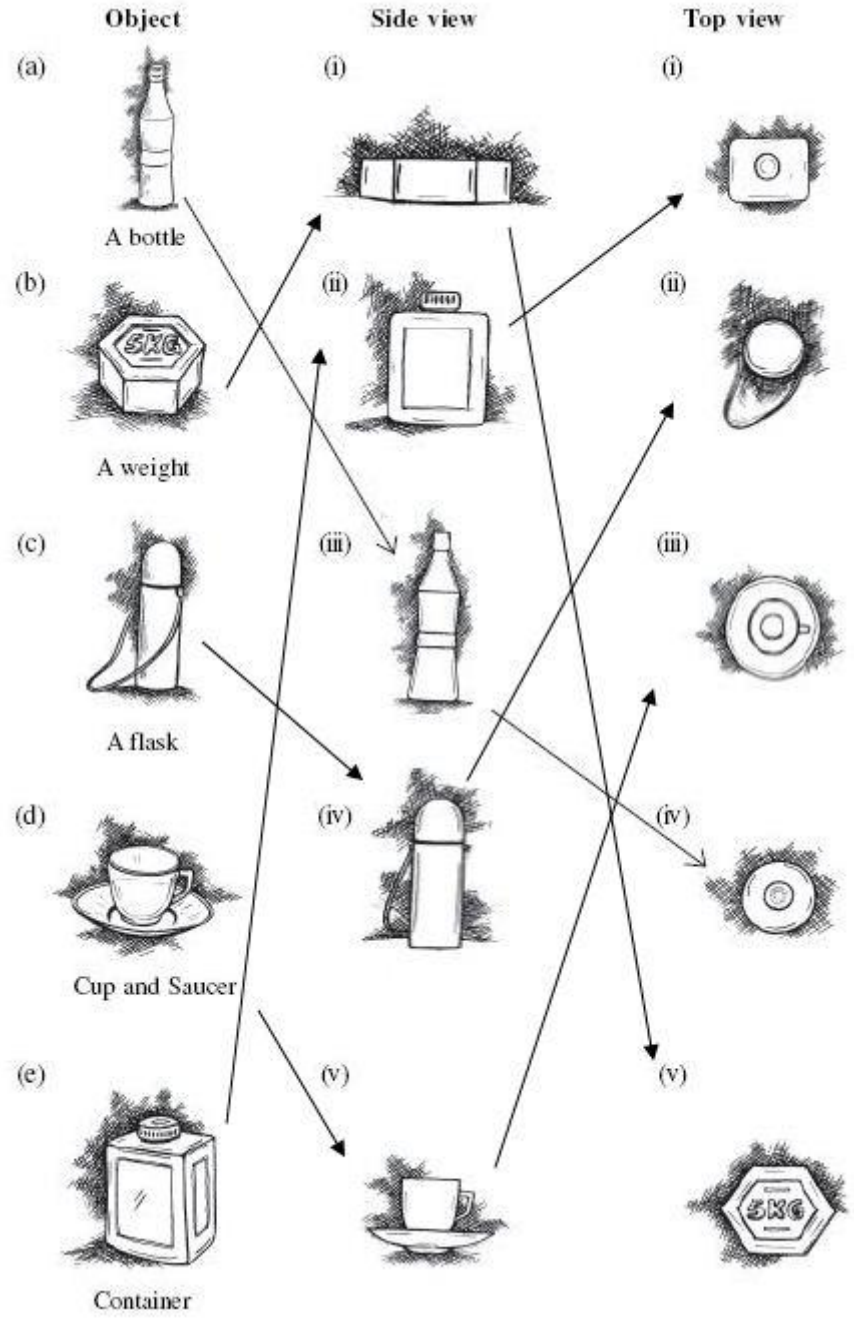
NCERT Solutions for Class 8 Maths Chapter 10 - Visualising Solid Shapes

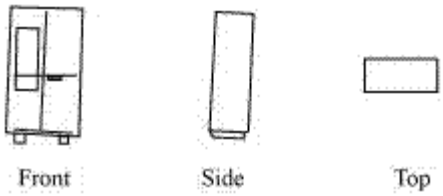
Chapter 10 - Visualising Solid Shapes Exercise Ex. 10.1

Solution 1



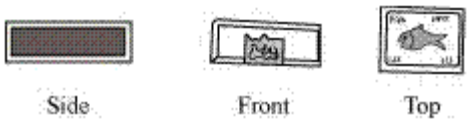
Solution 2

(a)



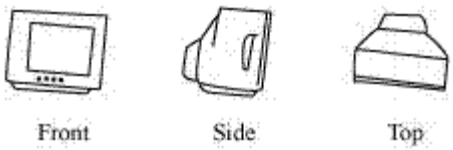
(i) Front (ii) Side (iii) Top

(b)



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

(c)



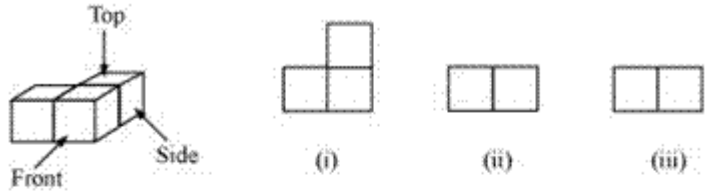
(i) Front (ii) Side (iii) Top

(d)

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

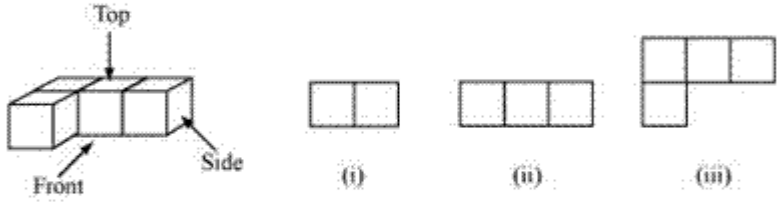
Solution 3

(a)



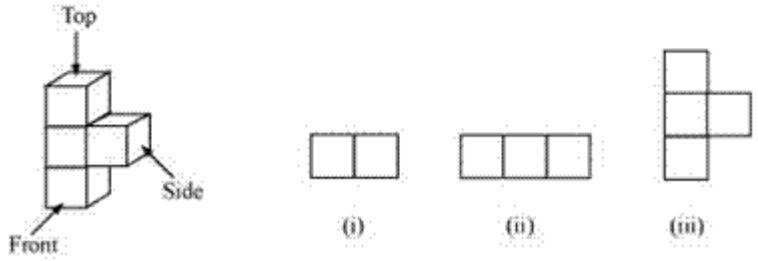
(i) Top (ii) Front/Side (iii) Side/Front

(b)



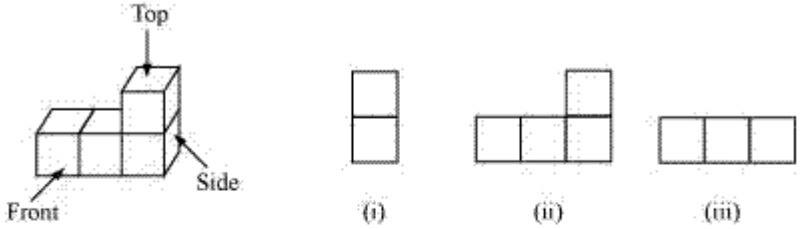
(i) Side (ii) Front (iii) Top

(c)



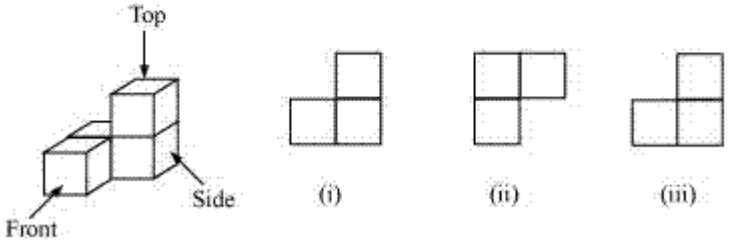
(i) Top (ii) Side (iii) Front

(d)



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

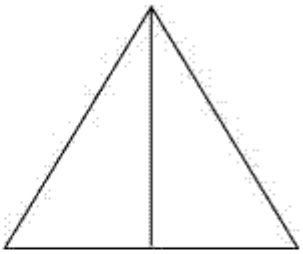
(e)



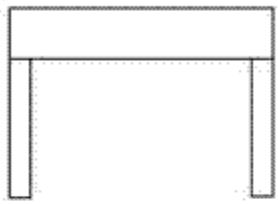
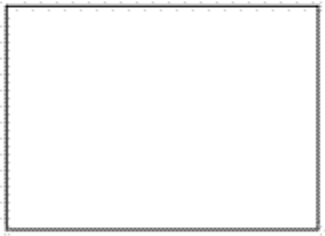
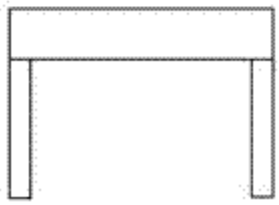
(i) Front/Side (ii) Top (iii) Side/Front

Solution 4

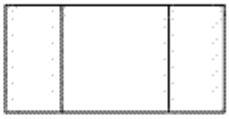
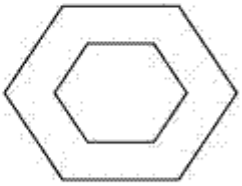
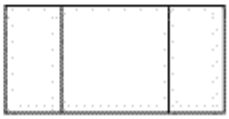
(a)

A military tent	
Front View	
Top View	
Side View	

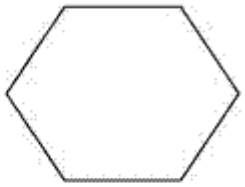
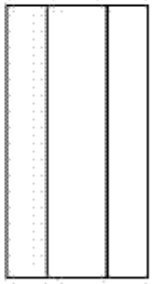
(b)

A table	
Front View	
Top View	
Side View	

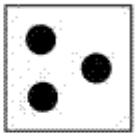
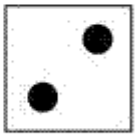
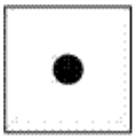
(c)

A nut	
Front View	
Top View	
Side View	

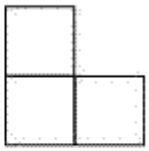
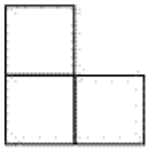
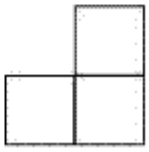
(d)

A hexagonal block	
Front View	
Top View	
Side View	

(e)

A dice	
Front View	
Top View	
Side View	

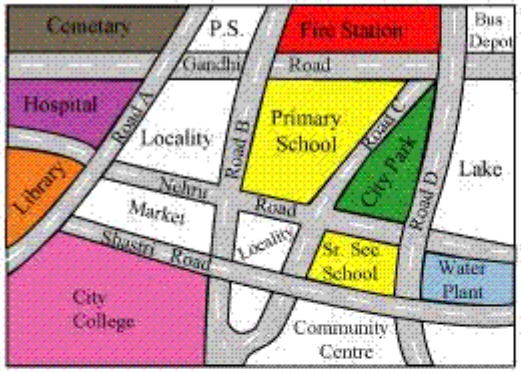
(f)

A solid	
Front View	
Top View	
Side View	

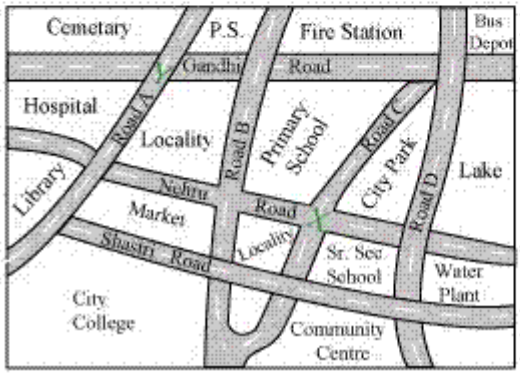
Chapter 10 - Visualising Solid Shapes Exercise Ex. 10.2

Solution 1

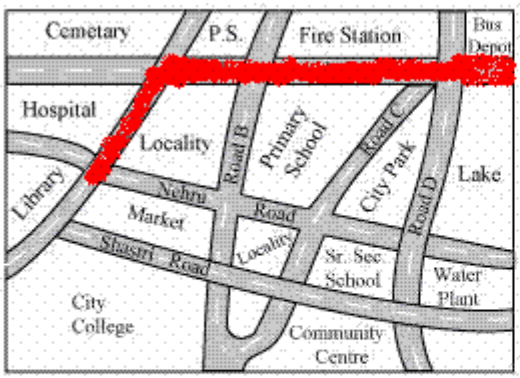
(a) The given map coloured in the required way is as follows.



(b)The marks can be put at the given points as follows.



(c) The shortest route from the library to bus depot is represented by red colour.

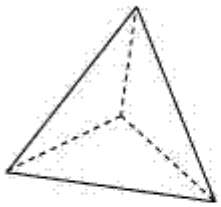


(d) Between the Market and the City Park, the City Park is further east.

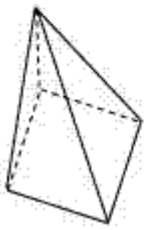
(e) Between the Primary School and the Sr. Secondary School, the Sr. Secondary School is further south.

(i) No, such a polyhedron is not possible. A polyhedron has minimum 4 faces.

(ii) Yes, a triangular pyramid has 4 triangular faces.



(iii) Yes, a square pyramid has a square face and 4 triangular faces.



Solution 2

A polyhedron has a minimum of 4 faces.

Solution 3

(i) It is not a polyhedron as it has a curved surface. Therefore, it will not be a prism also.

(ii) It is a prism.

(iii) It is not a prism. It is a pyramid.

(iv) It is a prism.

Solution 4

(i) A cylinder can be thought of as a circular prism i.e., a prism that has a circle as its base.

(ii) A cone can be thought of as a circular pyramid i.e., a pyramid that has a circle as its base.

Solution 5

A square prism has a square as its base. However, its height is not necessarily same as the side of the square. Thus, a square prism can also be a cuboid.

Solution 6

(i) Number of faces = F = 7

Number of vertices = V = 10

Number of edges = E = 15

We have, F + V − E = 7 + 10 − 15 = 17 − 15 = 2

Hence, Euler's formula is verified.

(ii) Number of faces = F = 9

Number of vertices = V = 9

Number of edges = E = 16

F + V − E = 9 + 9 − 16 = 18 − 16 = 2

Hence, Euler's formula is verified.

Solution 7

By Euler's formula, we have

F + V − E = 2

(i) F + 6 − 12 = 2

F − 6 = 2

F = 8

(ii) 5 + V − 9 = 2

V − 4 = 2

V = 6

(iii) 20 + 12 − E = 2

32 − E = 2

E = 30

Thus, the table can be completed as

Faces	8	5	20
Vertices	6	6	12
Edges	12	9	30

Solution 8

Number of faces = F = 10

Number of edges = E = 20

Number of vertices = V = 15

Any polyhedron satisfies Euler's Formula, according to which, $F + V - E = 2$

For the given polygon,

$F + V - E = 10 + 15 - 20 = 25 - 20 = 5 \neq 2$

Since Euler's formula is not satisfied, such a polyhedron is not possible.