

RD SHARMA

Solutions

Class 8 Maths

Chapter 19

Ex 19.1

1. Least number of planes that can enclose a solid are four. i.e Tetrahedron.

2. (i) No

(ii) Yes, A tetrahedron has 4 triangles as its faces.

(iii) Yes, A square pyramid has a square and four triangles as its faces.

3. Yes, if the number of faces is four or more.

4. Yes, a square prism same as a cube.

5. No, polyhedron doesn't have 10 faces, 20 edges and 15 vertices.

6. (i) $F = \text{Number of faces} = 7$
 $E = \text{Number of edges} = 15$
 $V = \text{Number of vertices} = 10$

Clearly $F + V = E + 2$.

(ii) $F = \text{Number of faces} = 10$
 $E = \text{Number of edges} = 17$
 $V = \text{Number of vertices} = 9$
clearly, $F + V = E + 2$.

(iii) $F = \text{Number of faces} = 9$
 $E = \text{Number of edges} = 20$
 $V = \text{Number of vertices} = 13$
clearly, $F + V = E + 2$.

6. (iv) $F = \text{Number of faces} = 8$
 $E = \text{Number of edges} = 12$
 $V = \text{Number of vertices} = 6$
clearly $F + V = E + 2$.

(iv)

$$E = \text{Number of edges} = 17$$

$$V = \text{Number of vertices} = 9$$

$$\text{clearly } F+V = E+2.$$

$$7. (i) \text{ Faces} = x \text{ (or) } F.$$

$$\text{Vertices} = 6$$

$$\text{Edges} = 12$$

$$\therefore E+2 = F+V$$

$$F = E+2-V$$

$$= 12+2-6$$

$$= 14-6$$

$$= 8$$

$$\therefore 8 \text{ Faces}$$

$$(ii) F = 5, V = 9, E = 9$$

$$9+2 = 5+V$$

$$\Rightarrow V = 11-5 = 6.$$

$$\text{Vertices} = 6.$$