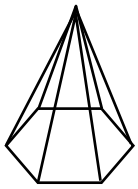
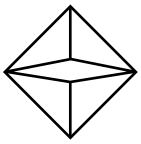
VISUALISING SOLID SHAPES

EULER'S FORMULA

EXERCISE

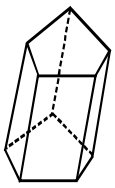
Q.1 Fill the following table and verify Euler's Formula :

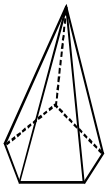
Solid	f	v	e	f + v	e + 2
(i)  (ii) 					

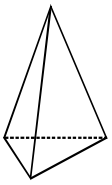
Q.2 If a polyhedron has six faces and eight vertices, how many edges does it have ?

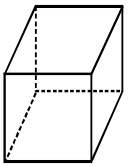
Q.3 How many faces a polyhedron will have if it has sixteen vertices and four edges.

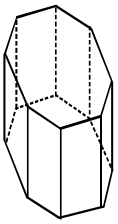
Q.4: Copy and complete the table by referring to the diagrams given below, where :
F represents the number of faces of a solid, E represents the number of edges and V represents the number of vertices, In each case verify the Euler's formula : F + V = E + 2

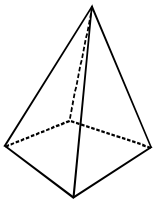
(i) 

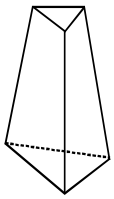
(ii) 

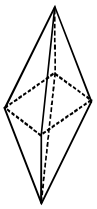
(iii) 

(iv) 

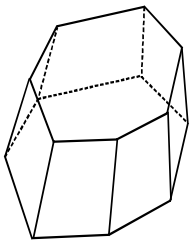
(v) 

(vi) 

(vii) 

(viii) 

(ix) 

(x) 

Q.5: A polyhedron is having 8 vertices and 12 edges. How many faces of it are there ?

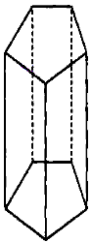
Q.6 An icosahedron is having 20 triangular faces and 12 vertices. Find the number of its edges.

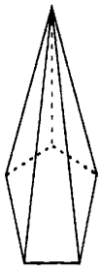
Q.7 What is the least number of planes that can enclose a solid ? Name the simplest regular polyhedron and verify Euler's formula for it.

Q.8 Can a polyhedron have 12 faces, 22 edges and 17 vertices ?

Q.9 Can a polyhedron have 14 faces, 20 edges and 8 vertices ?

Q.10 Verify Euler's formula for the given figures.

(i) 

(ii) 

ANSWER KEY

2. 12

3. 10

4.

Solid	F	E	V	F +V	E + 2
(i)	7	15	10	17	17
(ii)	6	10	6	12	12
(iii)	4	6	4	8	8
(iv)	6	12	8	14	14
(v)	10	24	16	26	26
(vi)	5	8	5	10	10
(vii)	5	9	6	11	11
(viii)	8	12	6	14	14
(ix)	7	12	7	14	14
(x)	9	21	14	23	23

5. 6

6. 30

8. not be polyhedron of the given number of faces, edges and vertices.

9. there can be polyhedron of the given number of faces, edges and vertices.