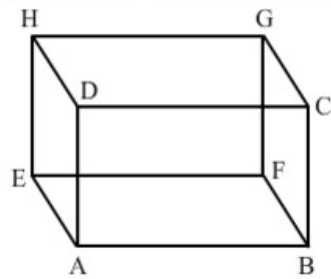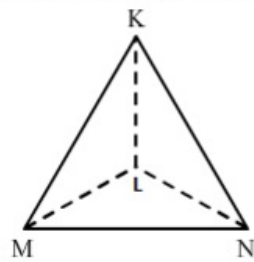Exercise 19B

Q4.

Answer :

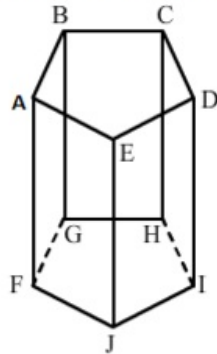(i) A cuboid has 8 vertices, namely *A*, *B*, *C*, *D*, *E*, *F*, *G* and *H*.

(ii) A tetrahedron has 4 vertices, namely *K*, *L*, *M* and *N*.

(iii) A pentagonal prism has 10 vertices, namely *A*, *B*, *C*, *D*, *E*, *F*, *G*, *H*, *I* and *J*.

(iv) A square pyramid has 5 vertices, namely *O*, *W*, *X*, *Y* and *Z*.
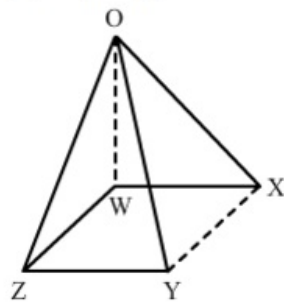
Q5.

Answer :

Euler's relation is:

$$F - E + V = 2$$
$Here:$
$F-$ Number of faces
$E-$ Number of edges
$V-$ Number of vertices

(i) A square prism

(There is an error in this question. It should have been a square prism rather than square.)

Number of faces $= F = 2$ squares $+ 4$ rectangular $= 6$
Number of edges $= E = 12$
Number of vertices $= V = 8$
$\Rightarrow (F - E + V) = 6 - 12 + 8 = 2$

(ii) A tetrahedron

Number of faces $= F = 4$
Number of edges $= E = 6$

Number of vertices $= V = 4$
$\Rightarrow (F - E + V) = 4 - 6 + 4 = 2$

(iii) A triangular prism

Number of faces $= F = 2$ triangular $+ 3$ rectangular $= 5$
Number of edges $= E = 9$
Number of vertices $= V = 6$
$\Rightarrow (F - E + V) = 5 - 9 + 6 = 2$

(iv) A square pyramid

Number of faces $= F = 2$ triangular $+ 3$ rectangular $= 5$
Number of edges $= E = 8$
Number of vertices $= V = 5$
$\Rightarrow (F - E + V) = 5 - 8 + 5 = 2$

********** END *********