



## Exercise 19B

Q1.

**Answer :**

The Euler's relation for a three dimensional figure can be expressed in the following manner:

$$F - E + V = 2$$

Here,

$F$  – Number of faces

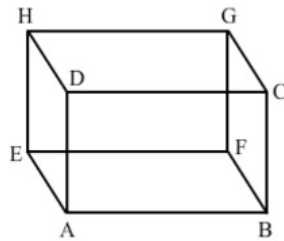
$E$  – Number of edges

$V$  – Number of vertices

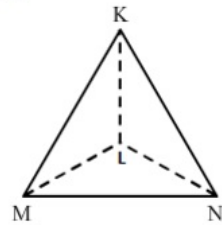
Q2.

**Answer :**

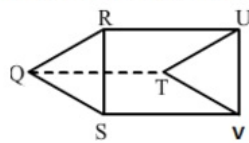
(i) A cuboid has 12 edges, namely  $AD, DC, CB, BA, EA, FB, HD, DC, CG, GH, HE$ , and  $GF$ .



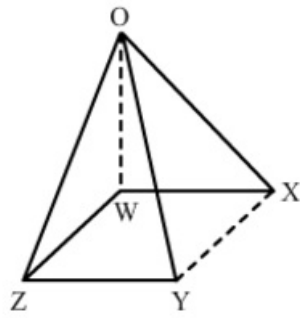
(ii) A tetrahedron has 6 edges, namely  $KL, LM, MN, NL, KM$  and  $KN$ .



(iii) A triangular prism has 9 edges, namely  $QR, RS, SQ, TU, UV, VT, RU, SV$  and  $QT$ .



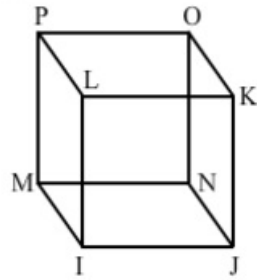
(iv) A square pyramid has 8 edges, namely  $OW, OX, OY, OZ, WX, XY, YZ$  and  $ZW$ .



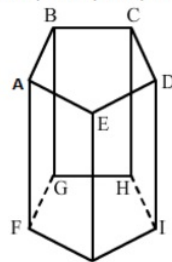
Q3.

**Answer :**

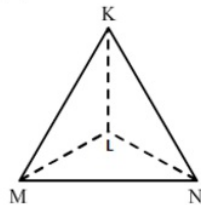
(i) A cube has 6 faces, namely  $IJKL$ ,  $MNOP$ ,  $PLIM$ ,  $OKJN$ ,  $POKL$  and  $MNJI$ .



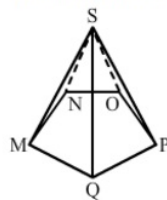
(ii) A pentagonal prism has 7 faces, i.e. 2 pentagons and 5 rectangles, namely  $ABCDE$ ,  $FGHIJ$ ,  $ABGF$ ,  $AEJF$ ,  $EDIJ$ ,  $DCHI$  and  $CBGH$ .



(iii) A tetrahedron has 4 faces, namely  $KLM$ ,  $KLN$ ,  $LMN$  and  $KMN$ .



(iv) A pentagonal pyramid has 6 faces, i.e. 1 pentagon and 5 triangles, namely  $NOPQM$ ,  $SNM$ ,  $SOP$ ,  $SNO$ ,  $SMQ$  and  $SQP$ .



\*\*\*\*\* END \*\*\*\*\*