



Orthogonality in space.

N.B.:

- 3 points not aligned determine a single plane.

Example:

$\times A$

$\times B$

$\times C$

- A point A and a line (d), such that A is outside the line (d), determine a single plane.

Example:

A \times

(d)

- 2 parallel lines (d) and (d') determine a single plane.

Example:



- Regular tetrahedron



D

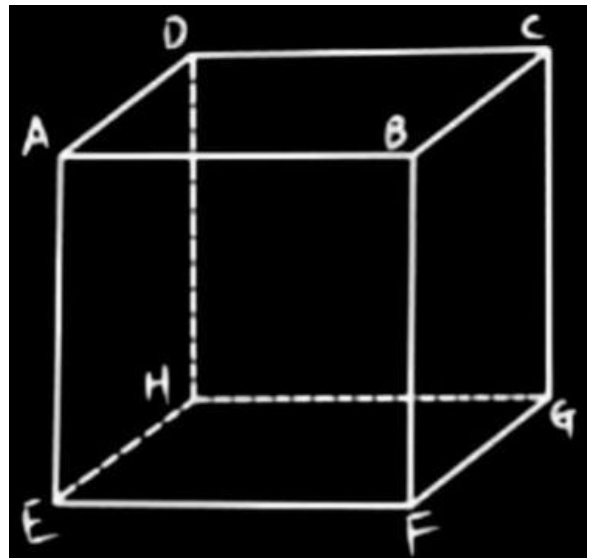
6 stops: [AB];[AD];[AC];

[BC];[DC];[BD]

4 summits: A;B;C;D

4 figures : ABC; ACD; ABD; BCD

- Cube



12 stops:

$AB=BC=CD=AD=AE=EF$
 $=FG=GH=HD=HE=FB$

6 figures are squares :

ABCD;EFGH;AEHD;

BFGC;HDCG;ABEF

8 summits: A;B;C;D;E;F;G;

- ✓ AF is perpendicular to EB
- ✓ FH is diagonal, perpendicular to EG and ED diagonal

Positions of 2 lines in space.

- 2 intersecting lines meet at 1 point.
- 2 parallel lines never meet.
- 2 lines are neither intersecting nor parallel.
- 2 lines coincide. (فوق بعضهم)
- 2 coplanar lines \iff 2 lines lie in the same plane.
- If the angle between 2 lines = 90° , then they are orthogonal.

- A line is perpendicular to the plane (P), if and only if the line is perpendicular to 2 intersecting lines in the plane (P).