

PROJECTIONS OF POINTS

1. GENERAL CONVENTIONS

- The actual point in space is annotated as an upper case letter.
- The front view is annotated as a lower case letter with a prime and the top view as a lower case letter without a prime, e.g., if the actual point is 'A' then its Front View is marked as a' and its Top view is marked with a .
- The intersection of the two principal planes, i.e., the Horizontal Plane (H.P.) and the Vertical Plane (V.P.), is a straight line known as the reference line and shall be annotated as the xy line.

2. PROJECTIONS OF POINTS

- A point can be situated anywhere in the three dimensional space relative to the two planes of projection.
- The point can be either above, below or within the H.P.
- The point can be either in front of, behind or within the V.P.

With Reference to H.P. With Reference to V.P.

Above

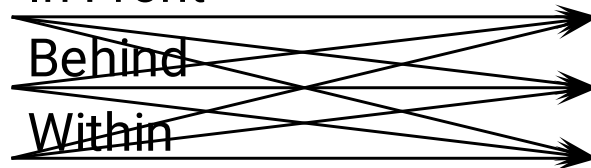
In Front

Below

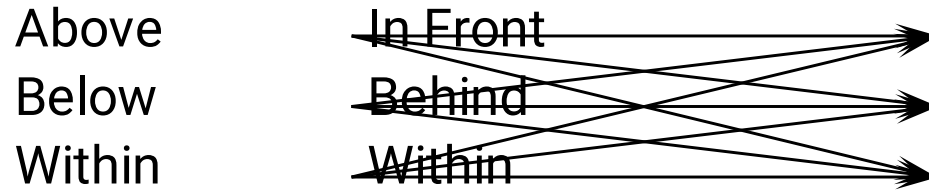
Behind

Within

Within



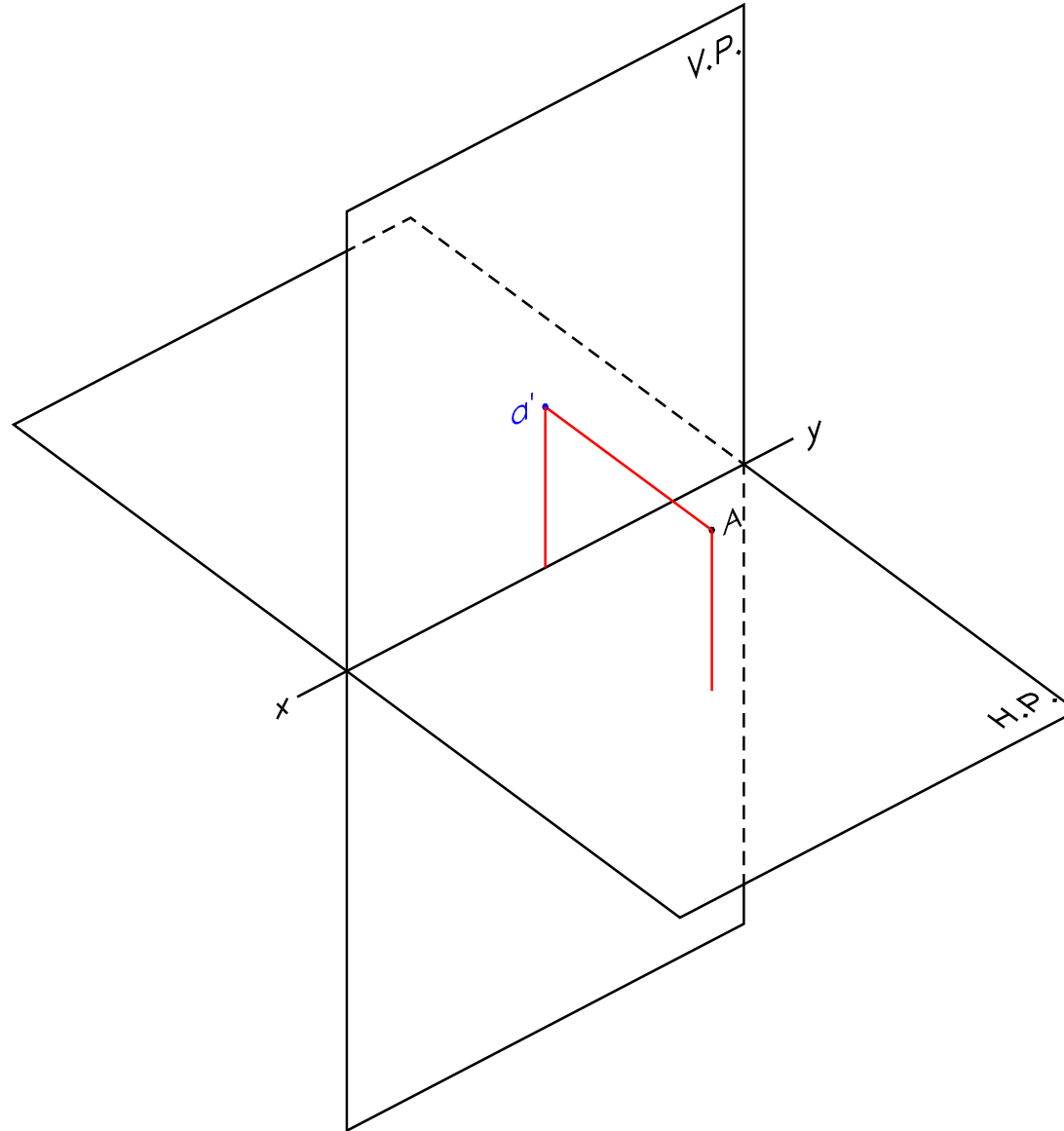
With Reference to H.P. With Reference to V.P.



- Nine possible positions with respect to the two reference planes.
- ☒ Above the H.P. & In Front of the V.P. (1st Angle)
- ☒ Above the H.P. & Behind the V.P. (2nd Angle)
- ☒ Above the H.P. & Within the V.P. (Boundary of 1st and 2nd Angle)
- ☒ Below the H.P. & In Front of the V.P. (4th Angle)
- ☒ Below the H.P. & Behind the V.P. (3rd Angle)
- ☒ Below the H.P. & Within the V.P. (Boundary of 3rd and 4th Angle)
- ☒ Within the H.P. & In Front of the V.P. (Boundary of 1st and 4th Angle)
- ☒ Within the H.P. & Behind the V.P. (Boundary of 2nd and 3rd Angle)
- ☒ Within the H.P. & Within the V.P. (In the Reference Line)

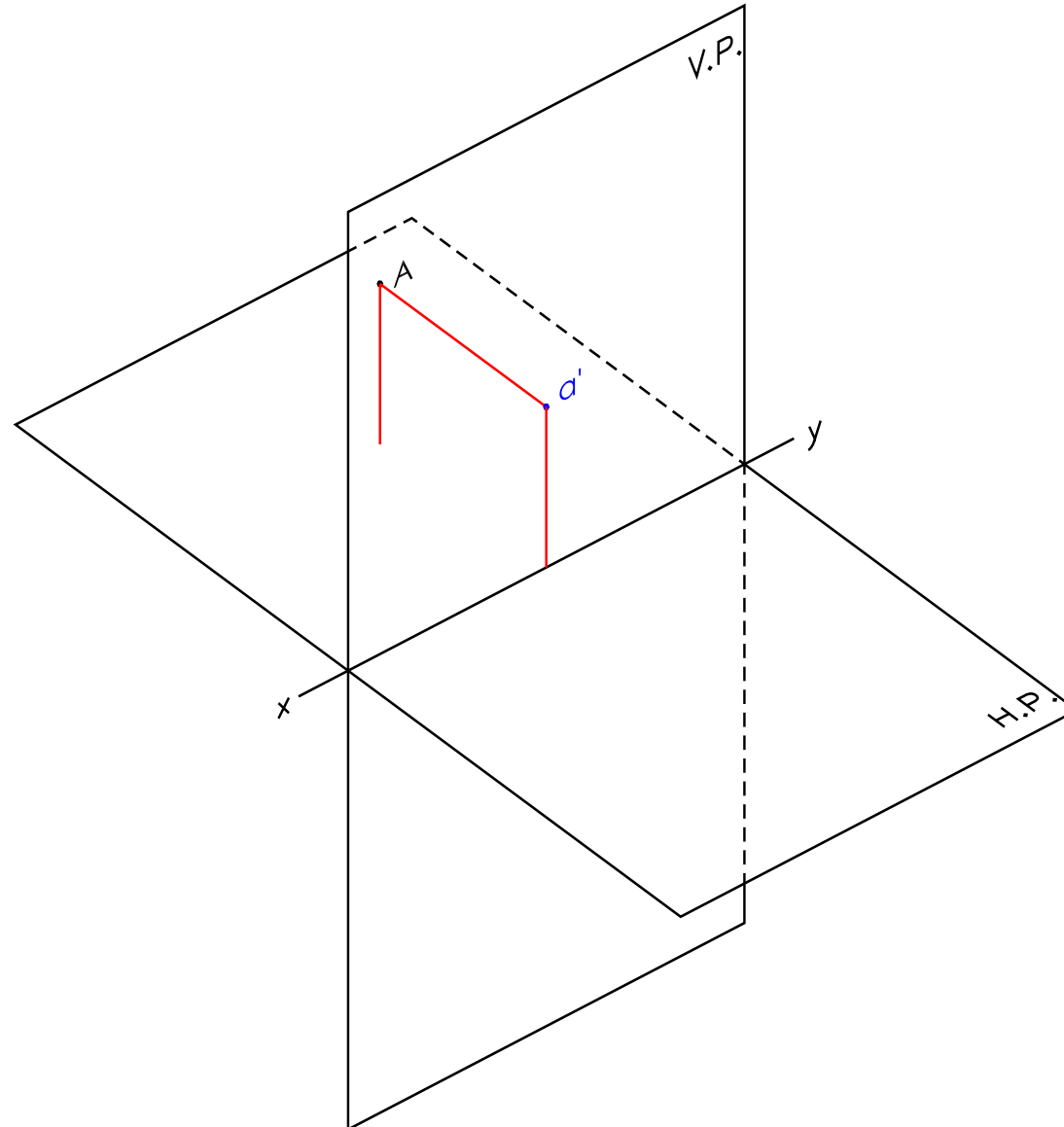
Point Above the H.P. and In Front of the V.P.

- Front View is drawn Above the xy .



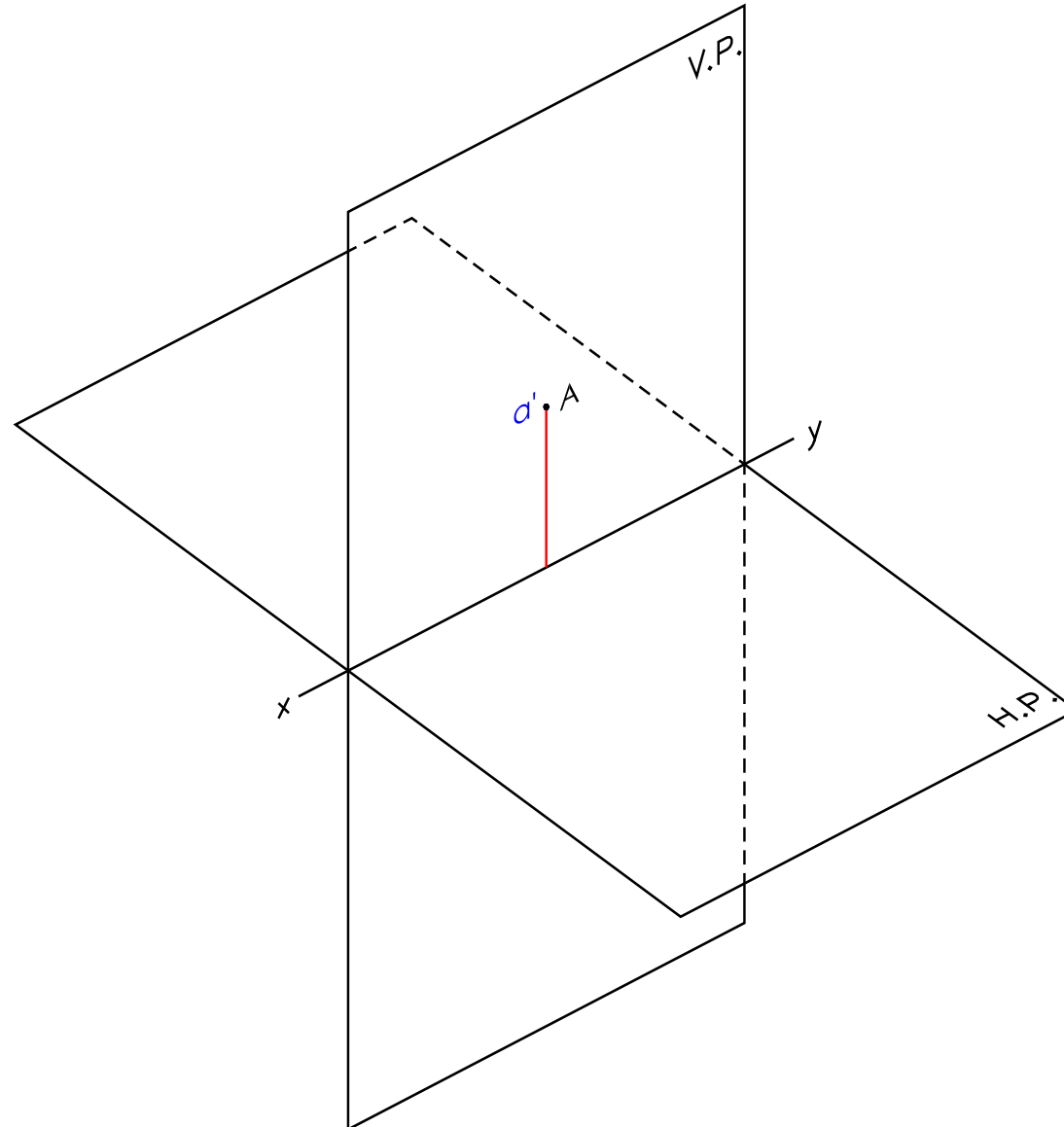
Point Above the H.P. and Behind the V.P.

- Front View is drawn Above the xy .



Point Above the H.P. and Within the V.P.

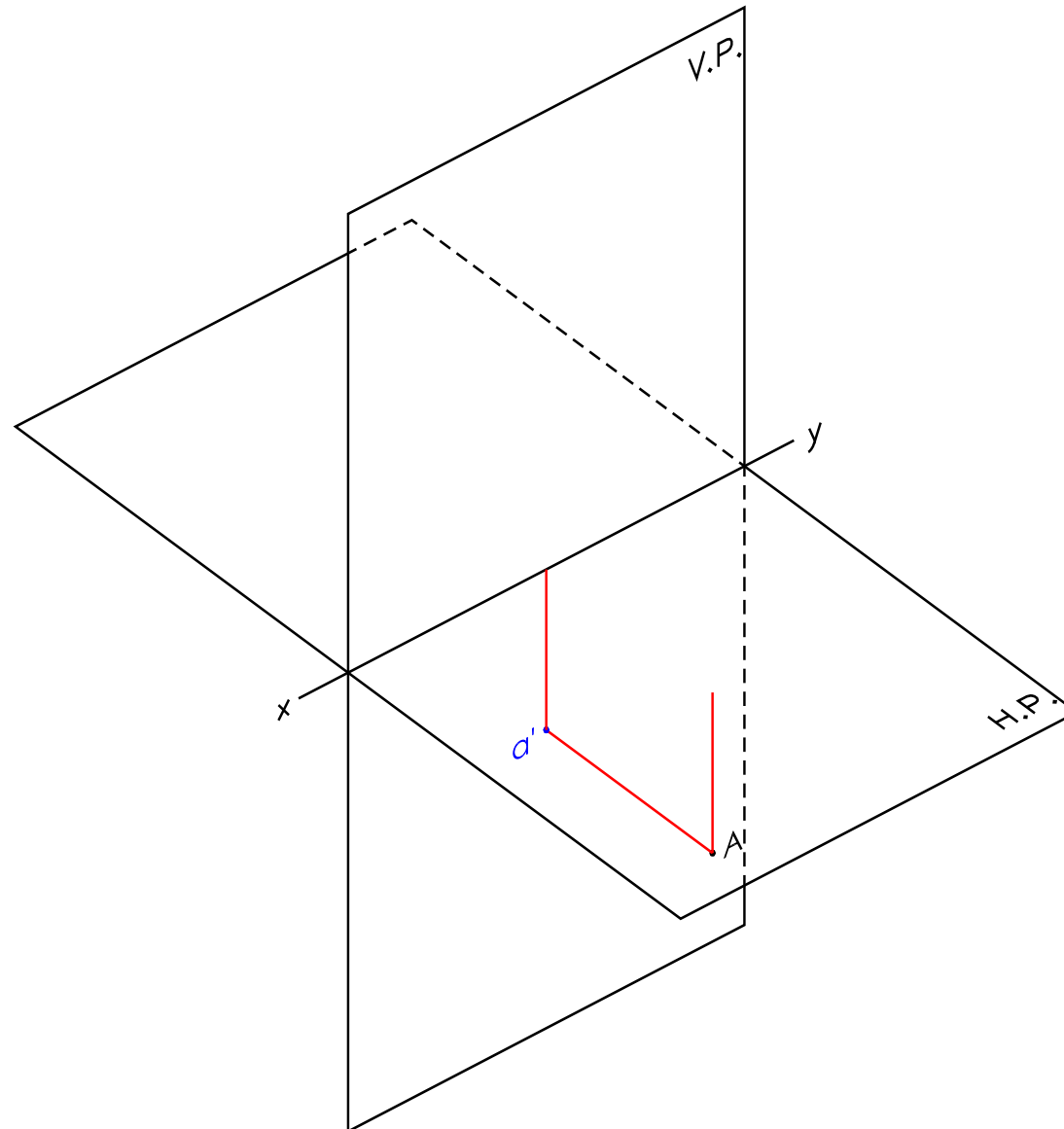
- Front View is drawn Above the xy .



If a point is ABOVE the H.P.;
Its Front View is always ABOVE
xy.

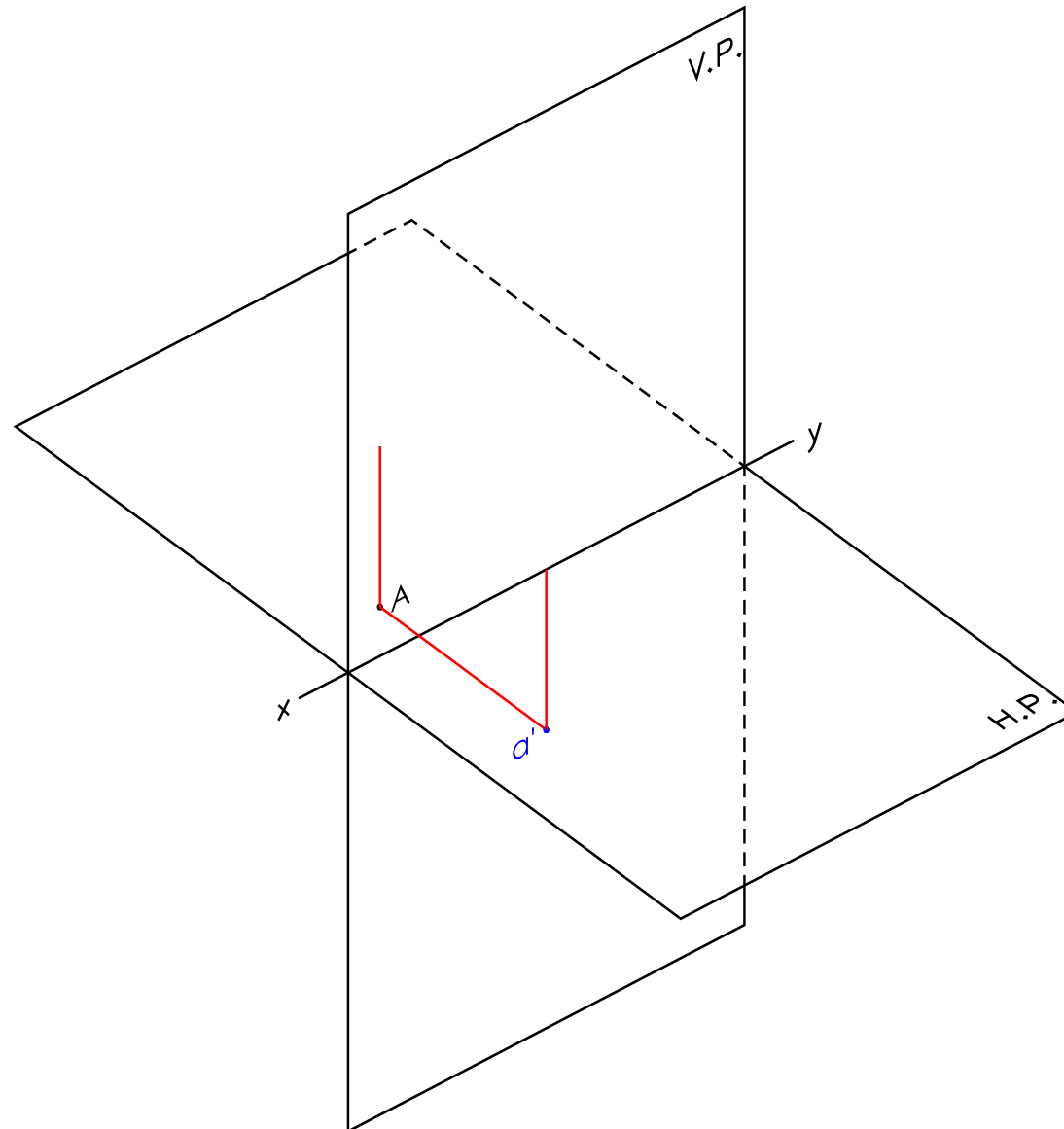
Point Below the H.P. and In Front of the V.P.

- Front View is drawn Below the xy .



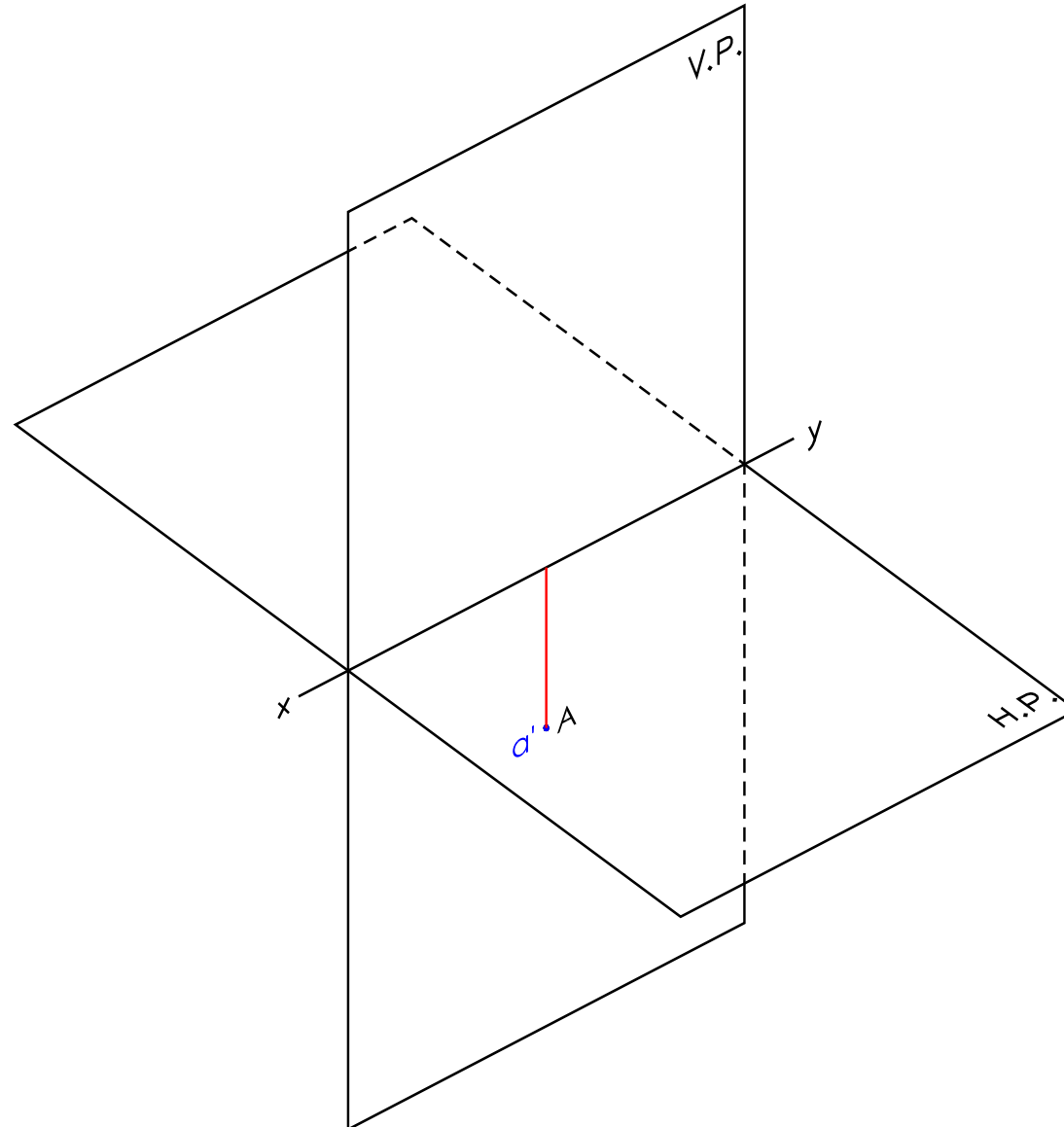
Point Below the H.P. and Behind the V.P.

- Front View is drawn Below the xy .



Point Below the H.P. and Within the V.P.

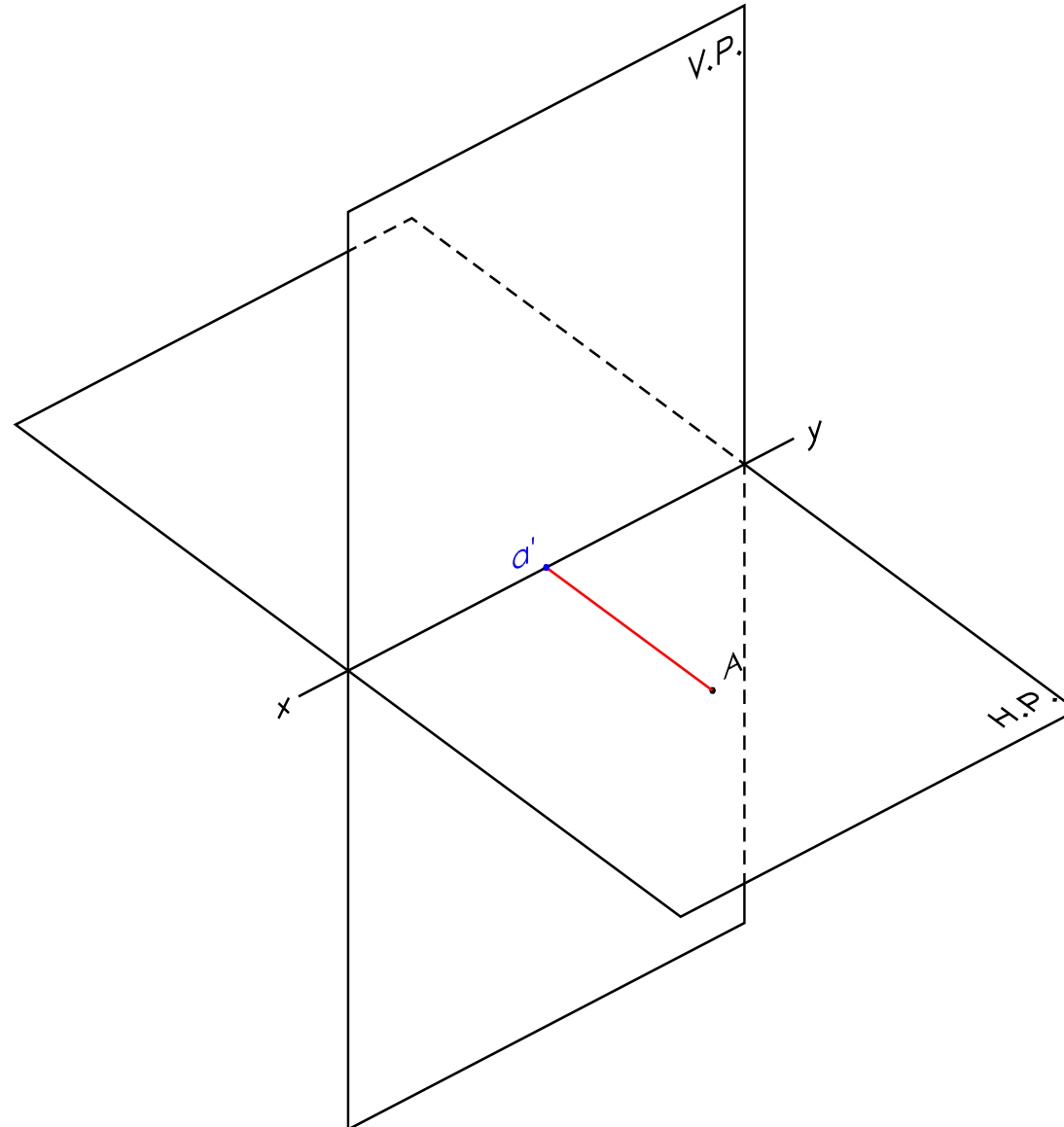
- Front View is drawn Below the xy .



If a point is BELOW the H.P.;
Its Front View is always BELOW
xy.

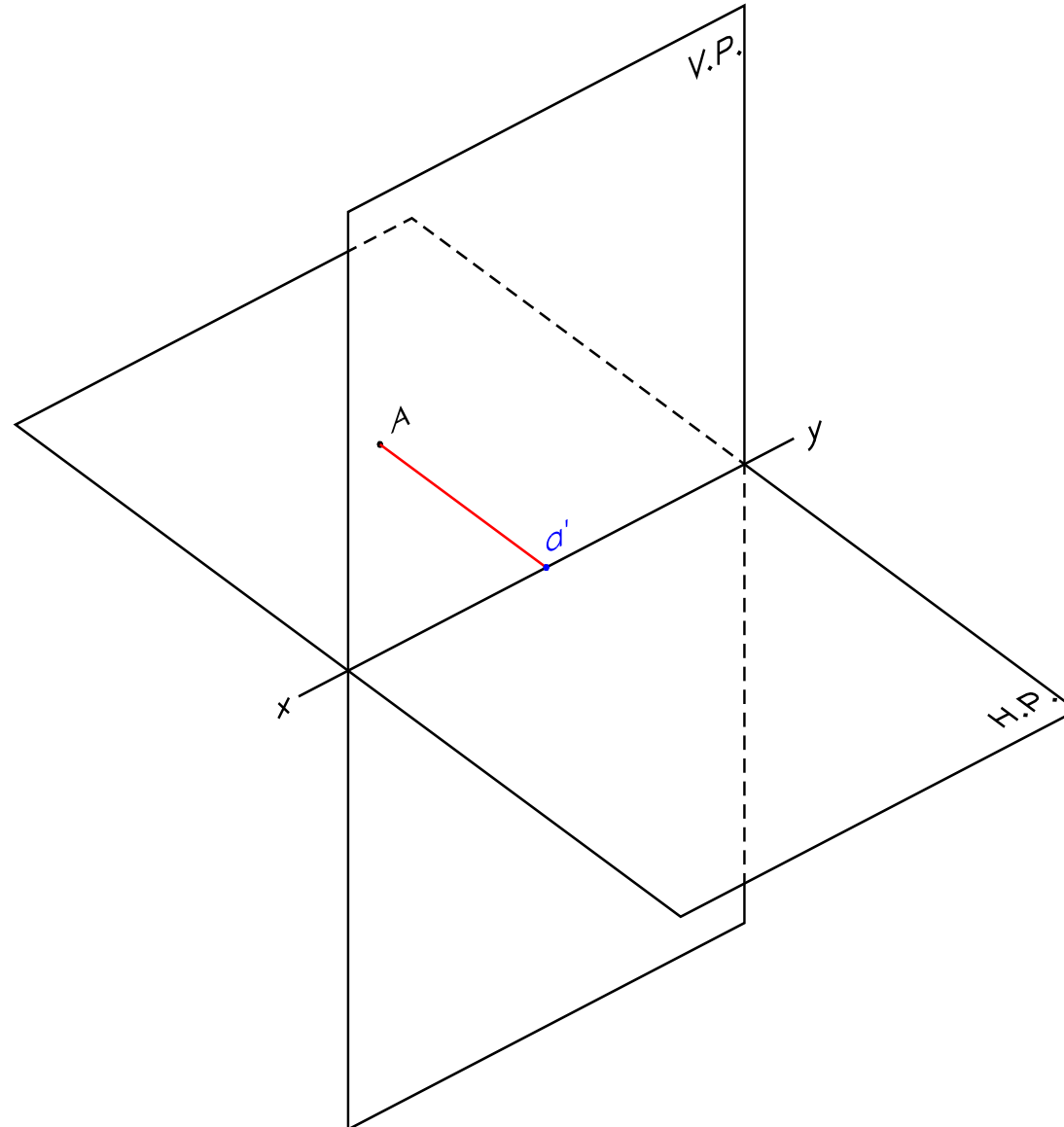
Point Within the H.P. and In Front of the V.P.

- Front View is drawn in the xy.



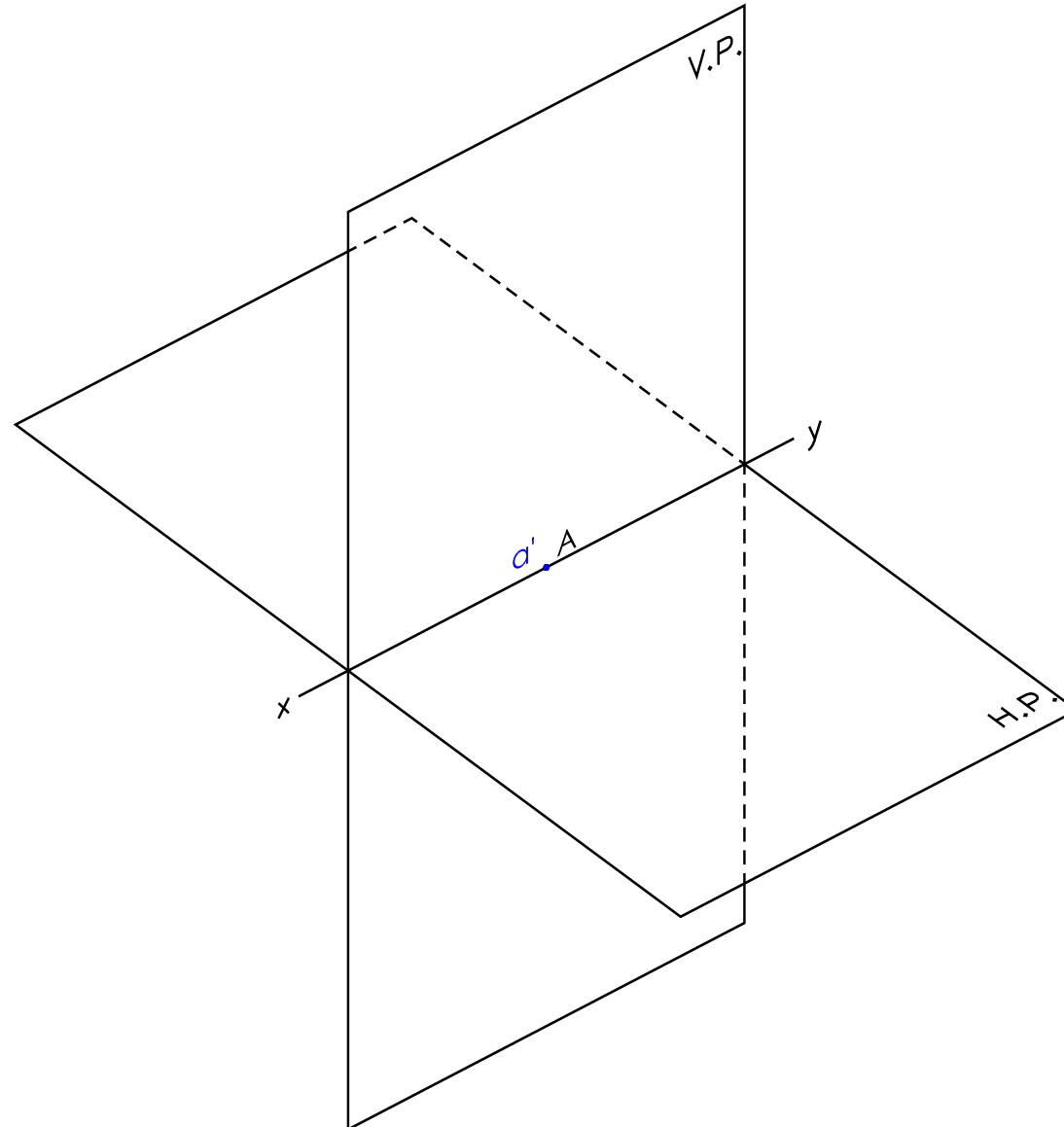
Point Within the H.P. and Behind the V.P.

- Front View is drawn in the xy .



Point Within the H.P. and Within the V.P.

- Front View is drawn in the xy.

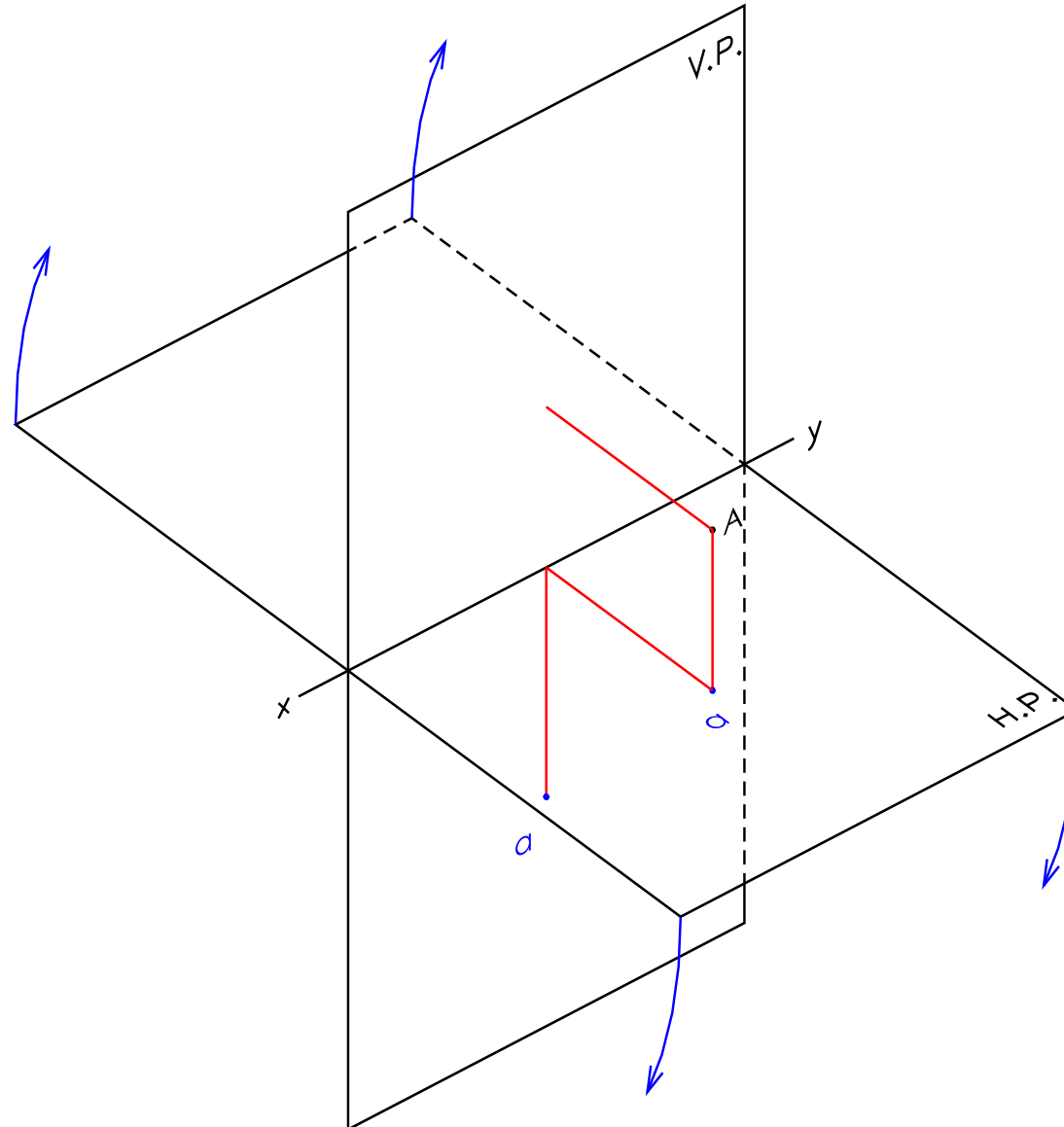


If a point is WITHIN the H.P.;
Its Front View is always IN *xy*.

- The position of the Front View of a point with respect to the xy line is dependent on its position with respect to the H.P.
- The distance of the Front View of the point from the xy line is the same as the distance of the point from the H.P.

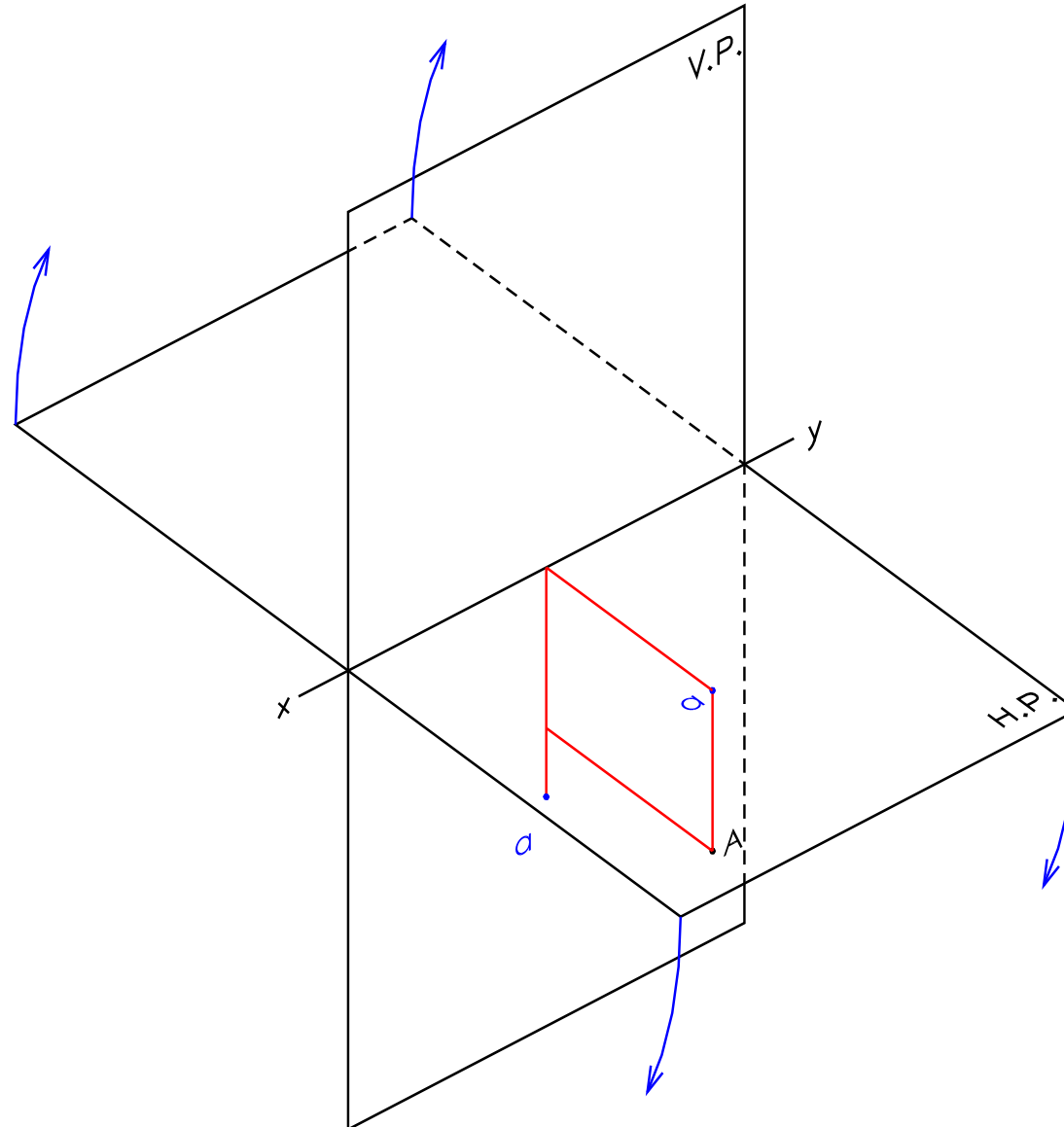
Point In front of the V.P. and Above the H.P.

- Top View is drawn Below the xy .



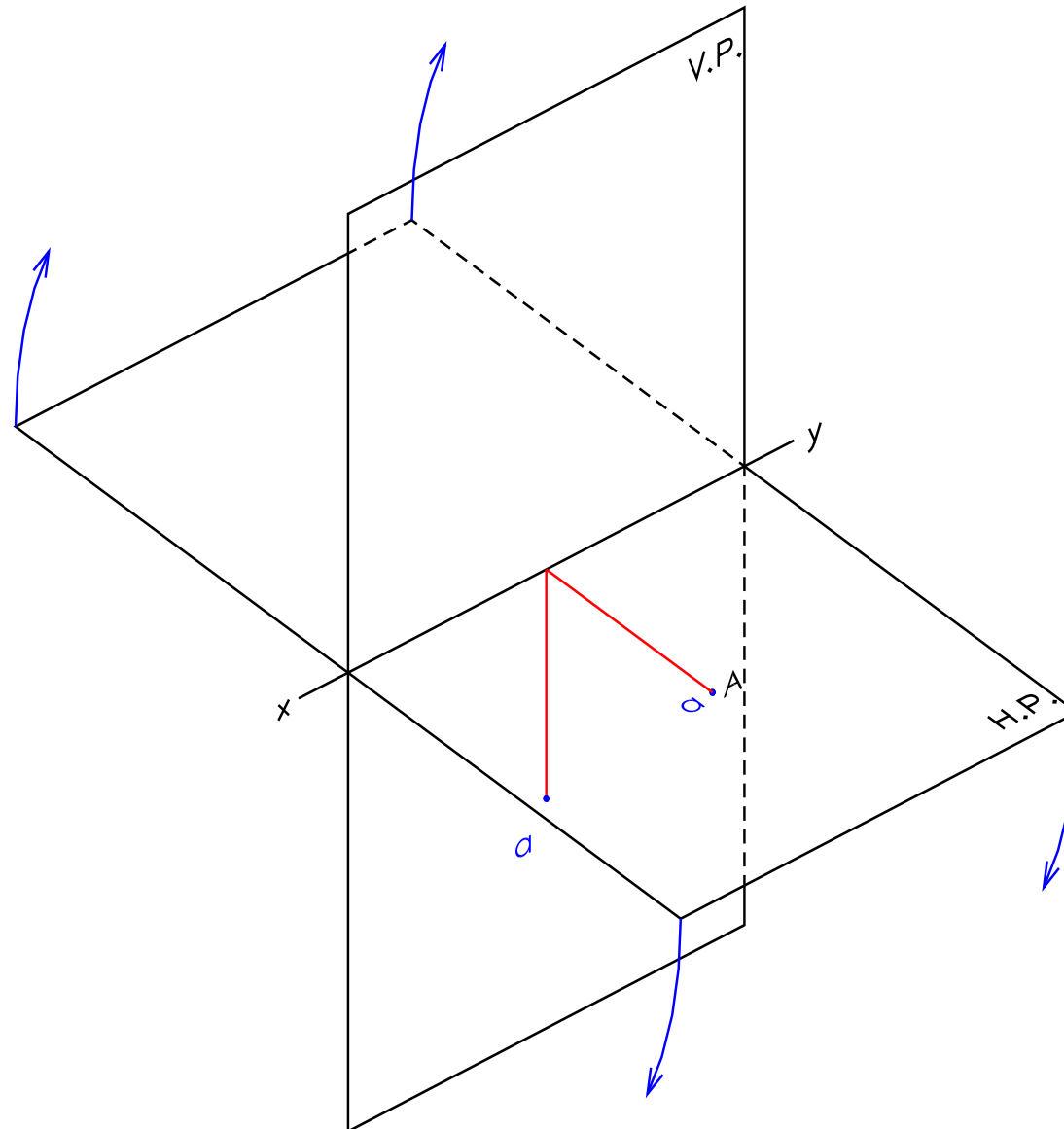
Point In front of the V.P. and Below the H.P.

- Top View is drawn Below the *xy*.



Point In front of the V.P. and Within the H.P.

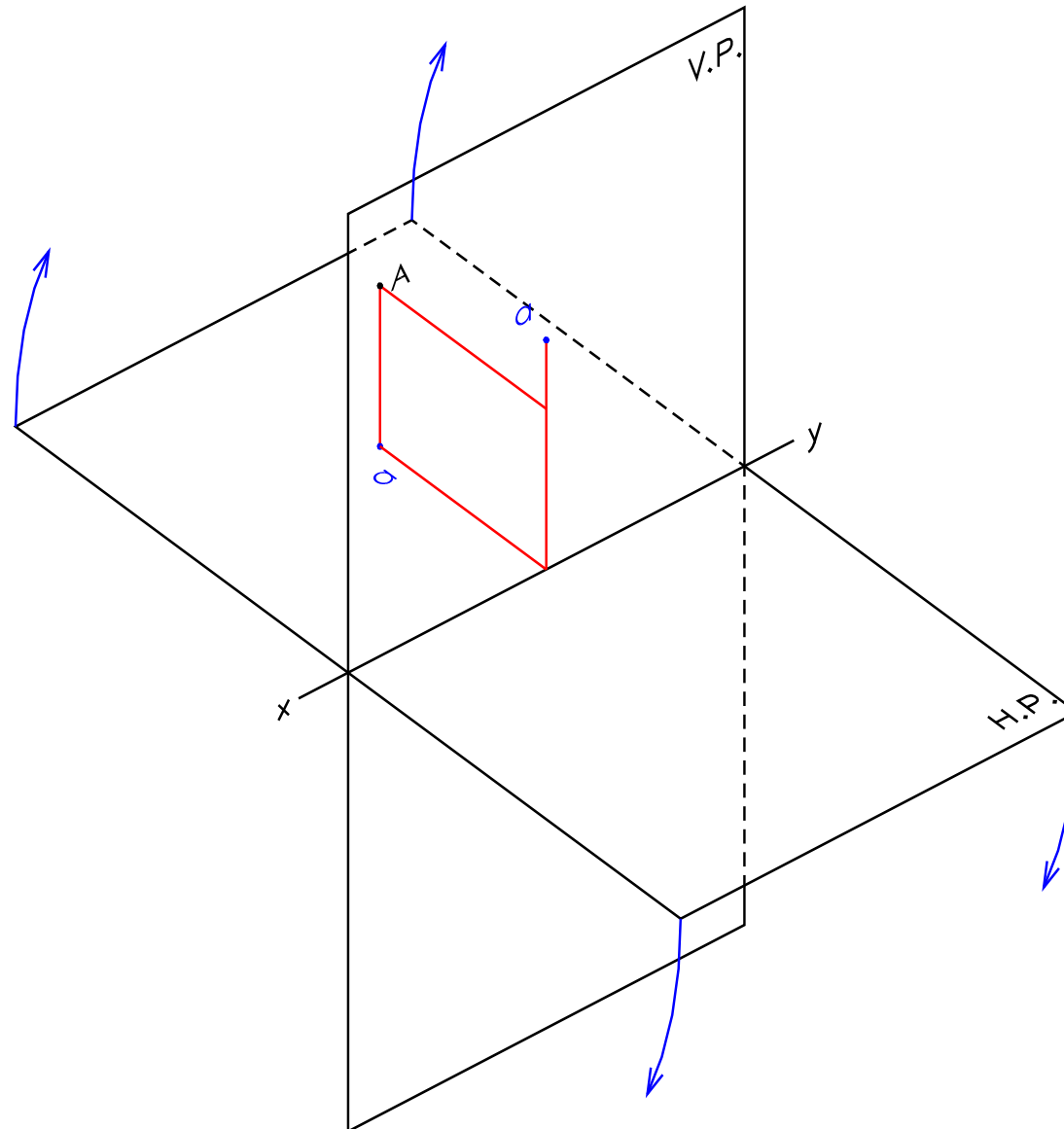
- Top View is drawn Below the xy .



If a point is IN FRONT of the V.P.;
Its Top View is always BELOW *xy*.

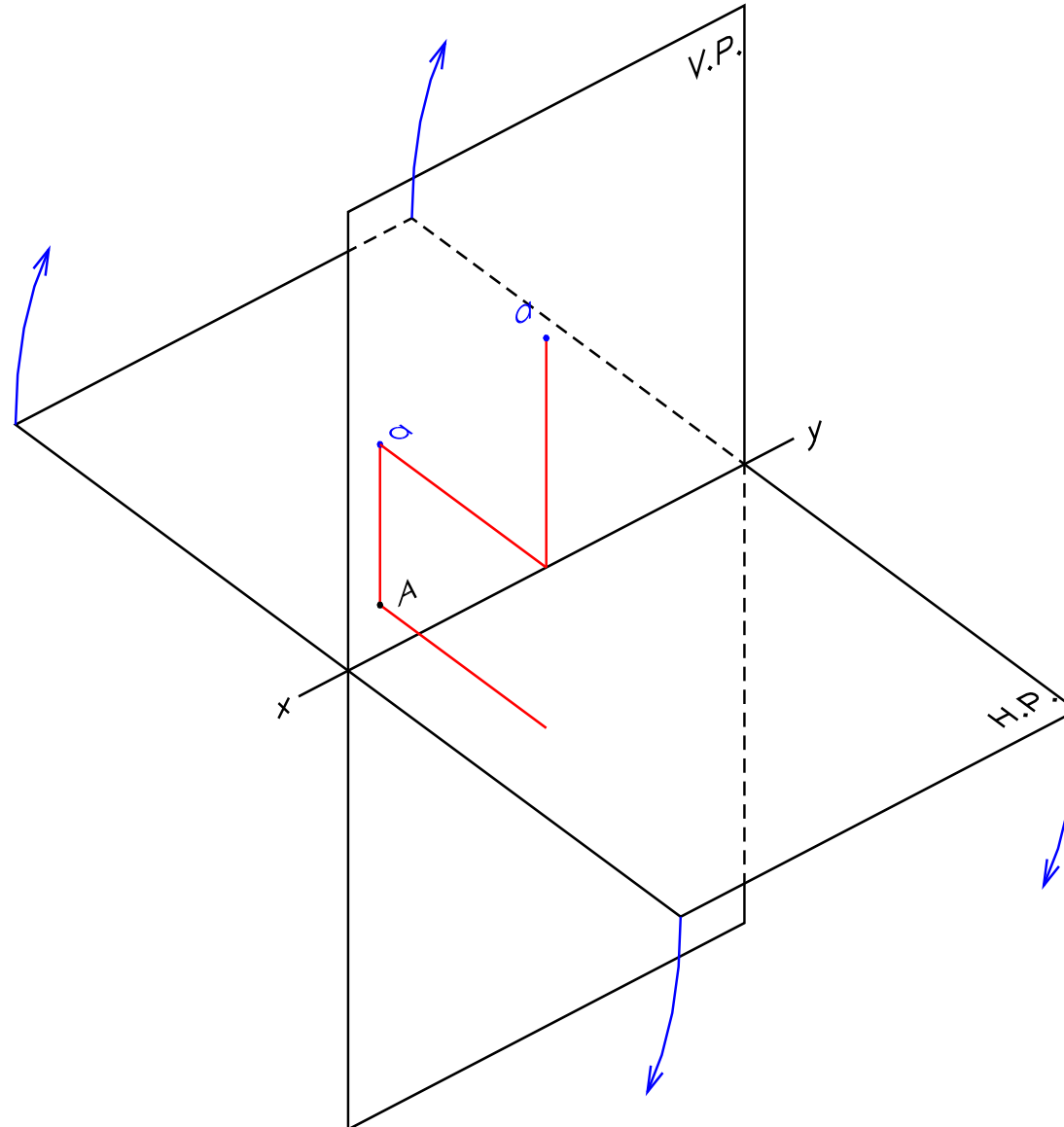
Point Behind the V.P. and Above the H.P.

- Top View is drawn Above the xy .



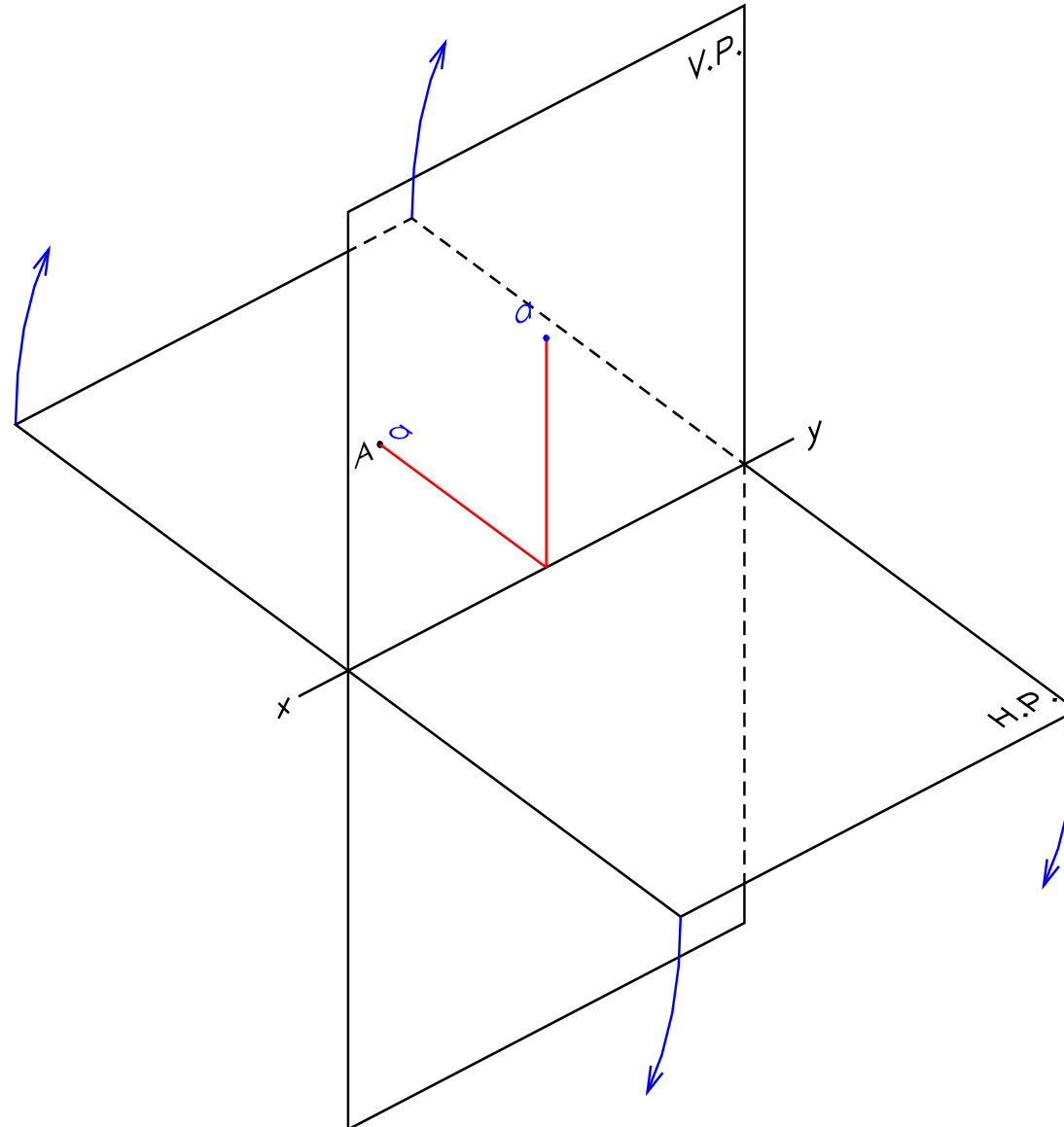
Point Behind the V.P. and Below the H.P.

- Top View is drawn Above the xy .



Point Behind the V.P. and Within the H.P.

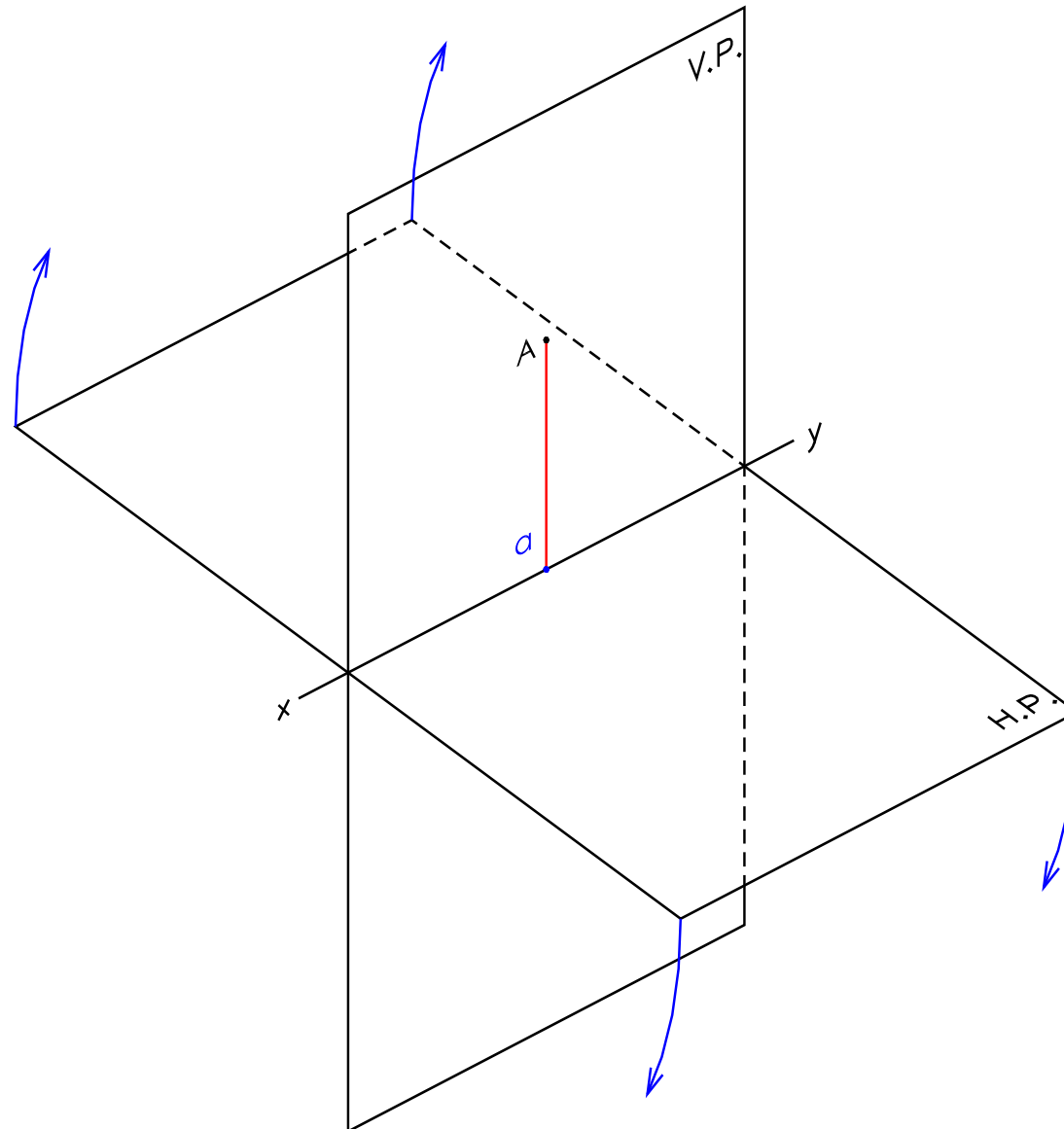
- Top View is drawn Above the xy .



If a point is BEHIND the V.P.;
Its Top View is always ABOVE *xy*.

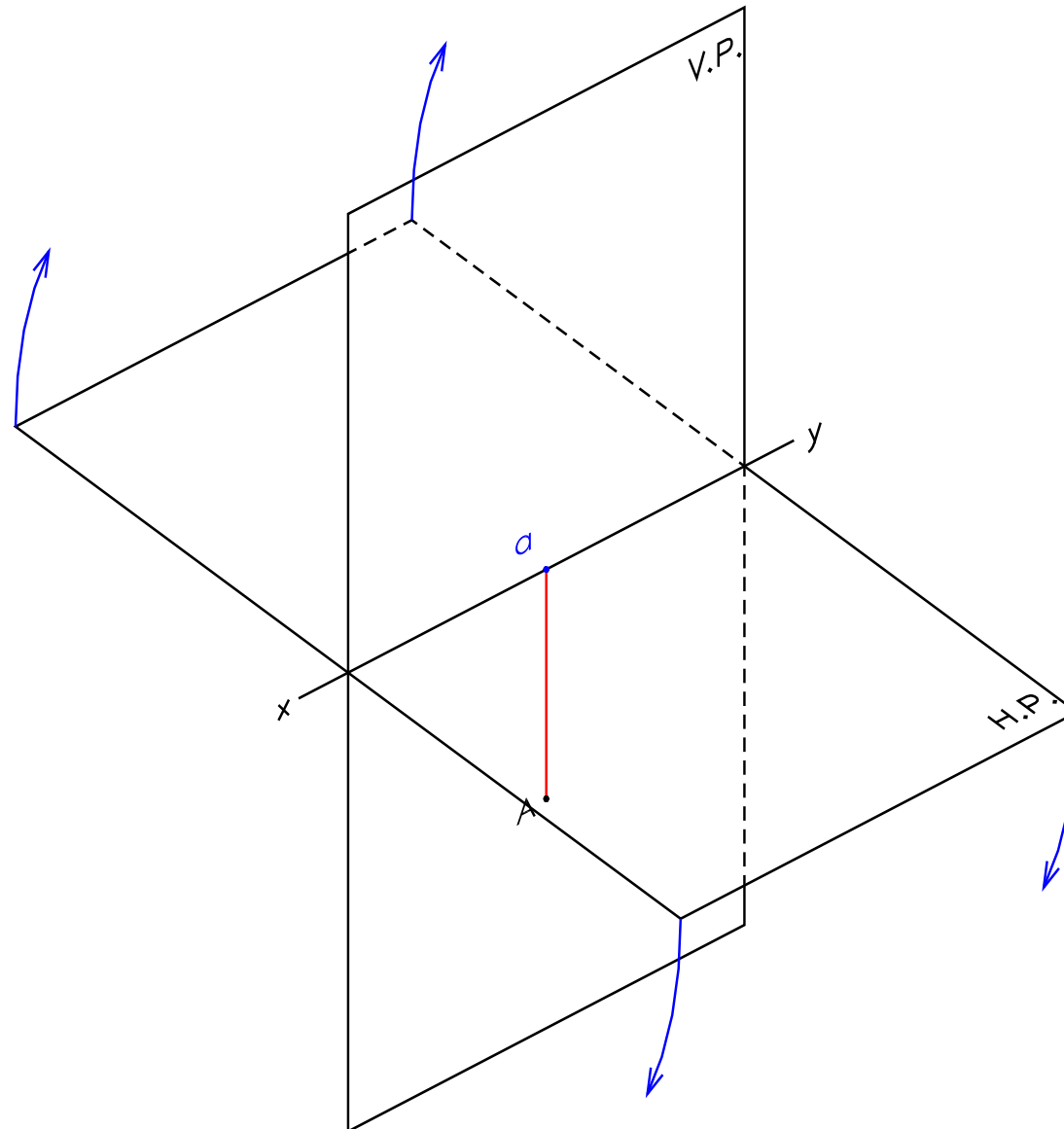
Point Within the V.P. and Above the H.P.

- Top View is drawn In the xy .



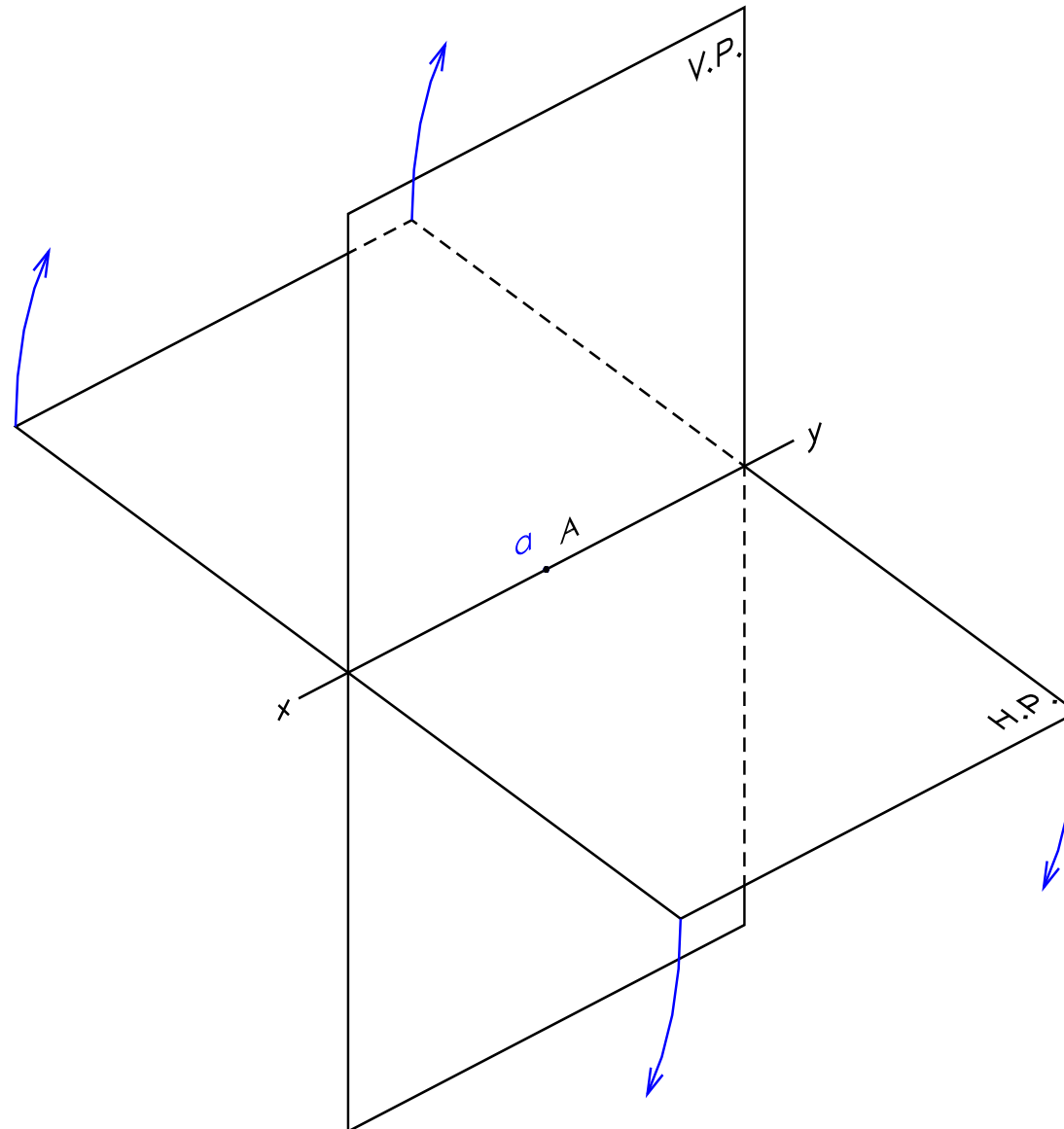
Point Within the V.P. and Below the H.P.

- Top View is drawn In the xy .



Point Within the V.P. and Within the H.P.

- Top View is drawn In the xy .



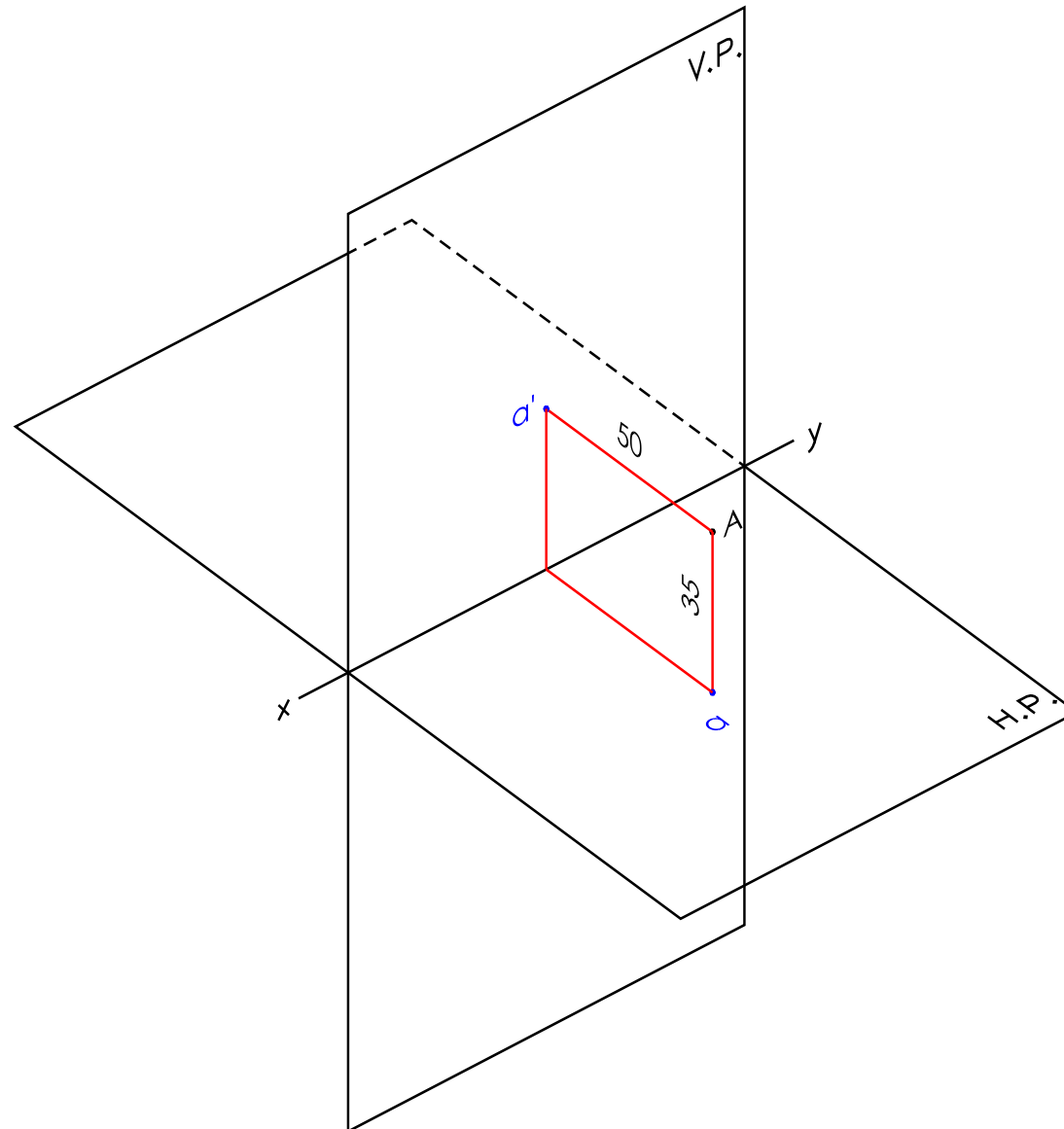
If a point is WITHIN the V.P.;
Its Top View is always IN *xy*.

- The position of the Top View of a point with respect to the *xy* line is dependent on its position with respect to the V.P. only.
- The distance of the Top View of the point from the *xy* line is the same as the distance of the point from the V.P.

Position w.r.t. HP	Position w.r.t. VP	F.V. w.r.t. xy	T.V. w.r.t. xy
Above	In Front	Above	Below
Above	Behind	Above	Above
Above	Within	Above	In
Below	In Front	Below	Below
Below	Behind	Below	Above
Below	Within	Below	In
Within	In Front	In	Below
Within	Behind	In	Above
Within	Within	In	In

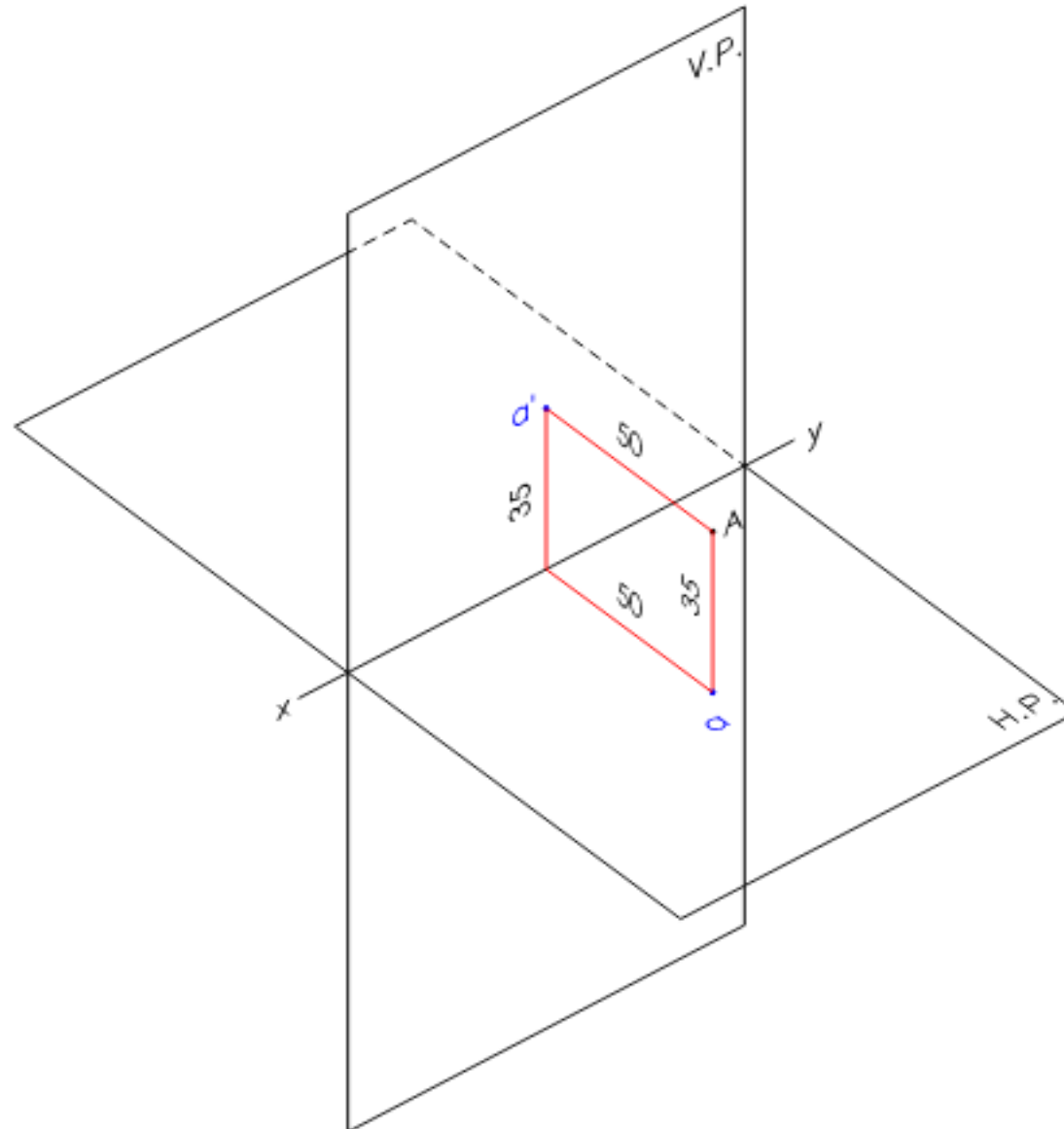
Example:

A point 'A' is 35 mm above the H.P. and 50 mm in front of the V.P.



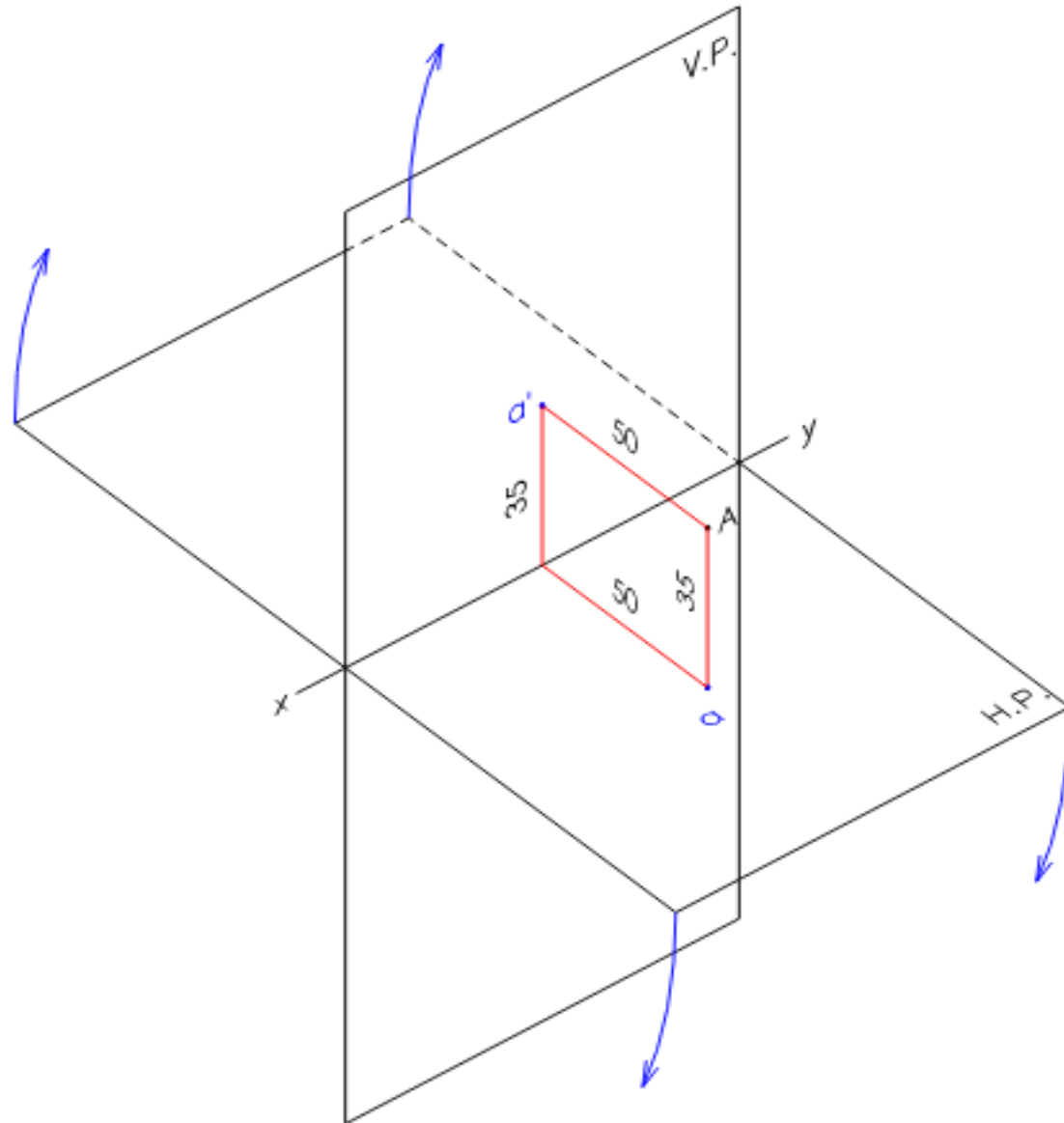
Example:

A point 'A' is 35 mm above the H.P. and 50 mm in front of the V.P.



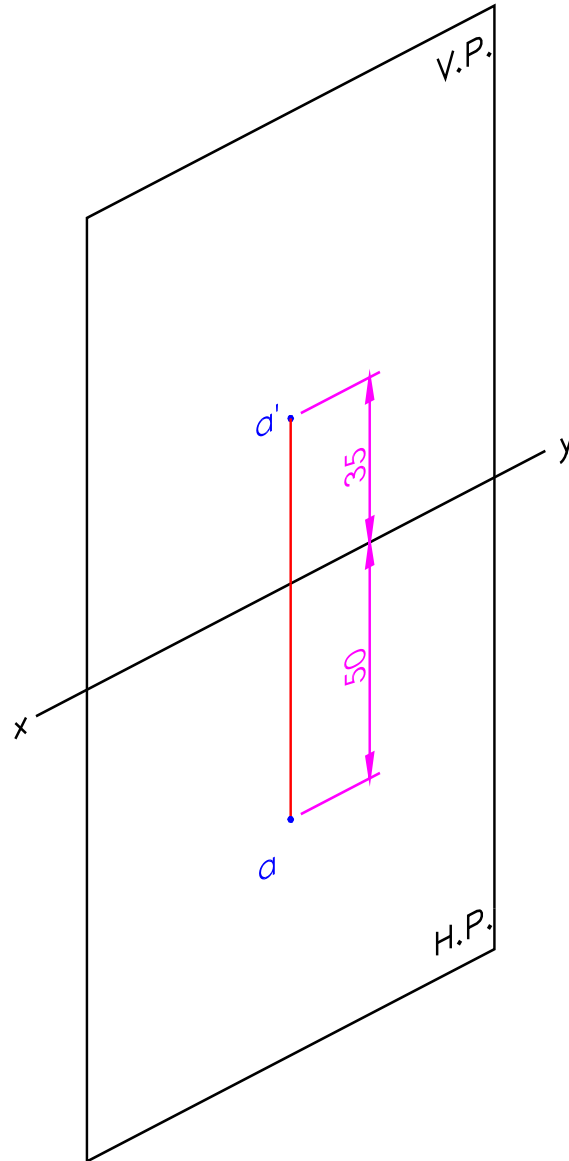
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