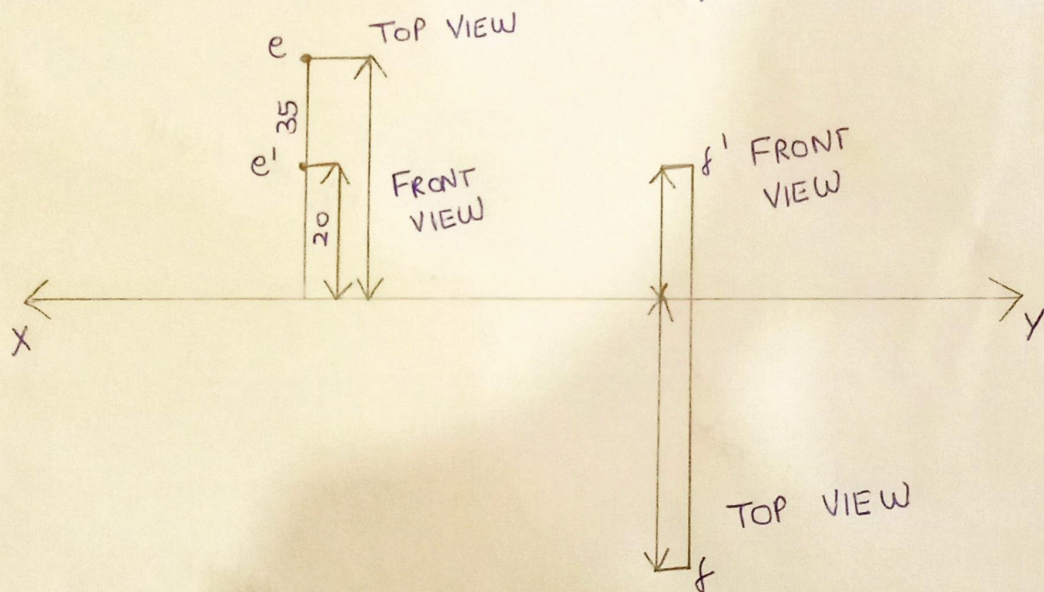1) A point lying 20mm above XY line represents the front view of two points E and F. The view of E is 35mm behind VP and the top view of F is 40mm infront of VP. Draw projections of the two points and state their positions with reference planes and quadrant in which they lie
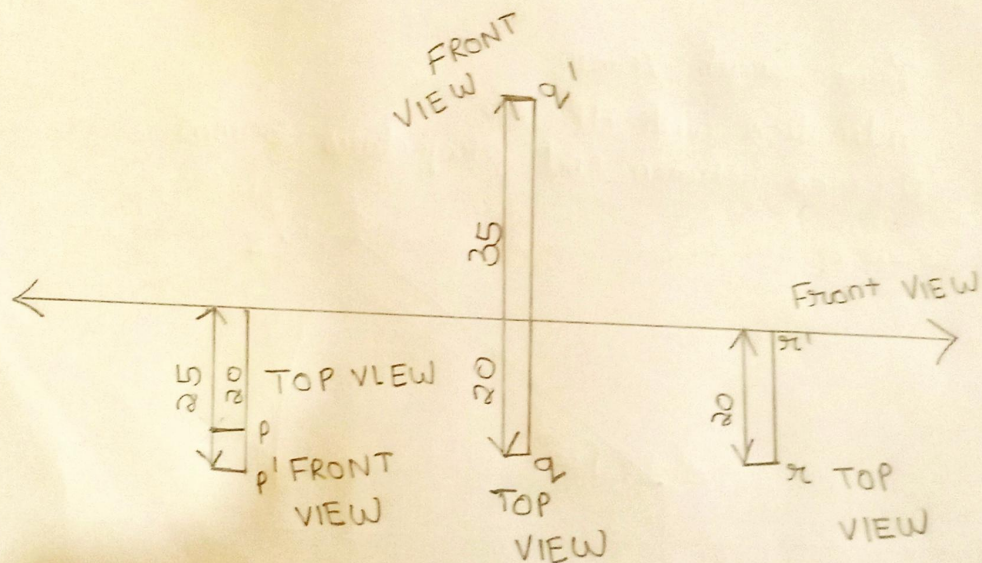
→

1) f ⟹ H.P:- 20mm [↑] above
   V.P :- 40mm [→] In front
   1st quadrant

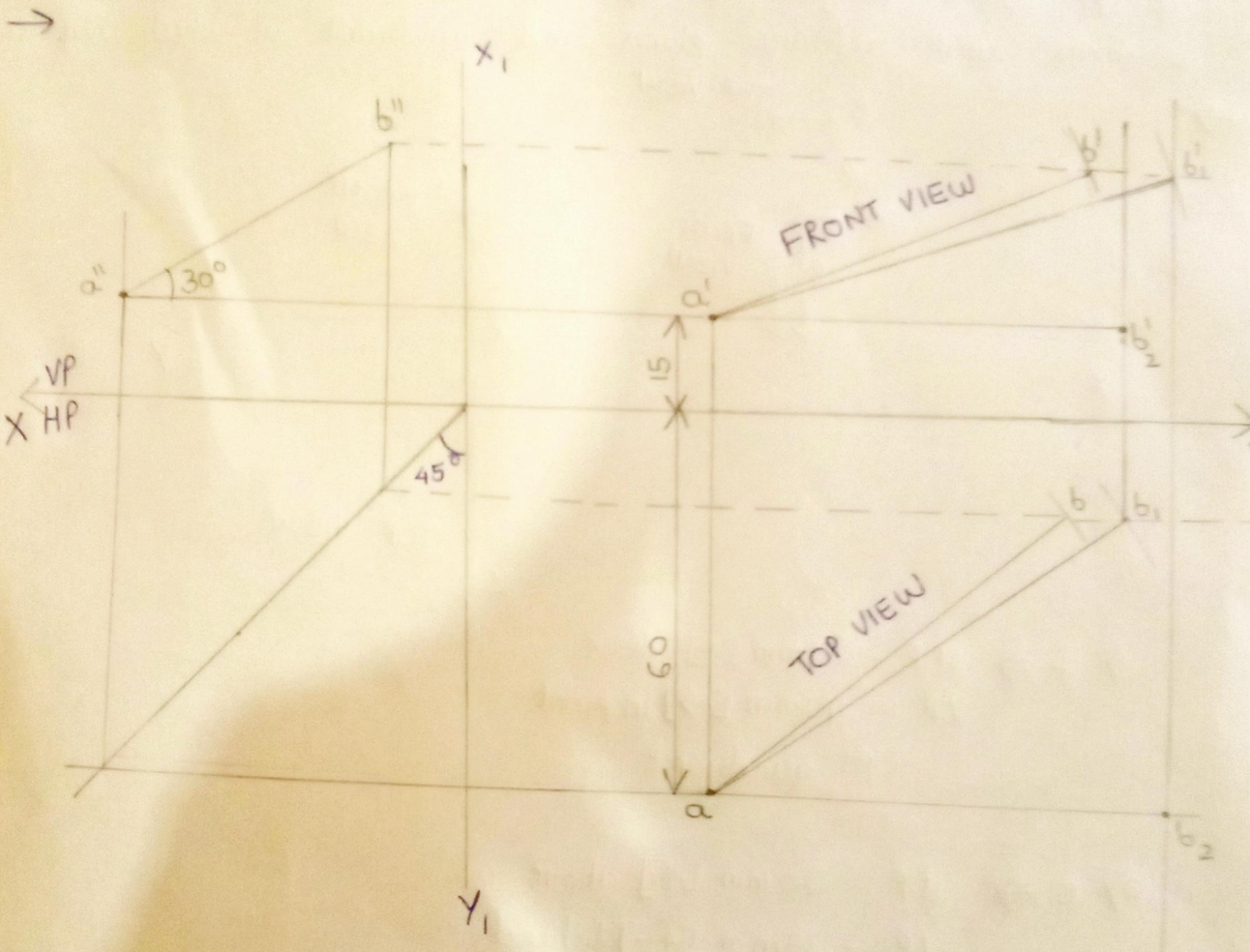2) e ⟹ H.P :- 20 mm [↑] above
   V.P :- 35mm [←] behind
   2nd quadrant

2) A point lying 20mm below the X-Y line is the top view of three points P, Q, R. P is 25mm below HP. The point Q is 35mm above HP and the point R is in H.P Draw the projections of the three points and state their positions with the reference planes and the quadrants in which they lie.

1) P ⇒ VP : 20mm infront
        HP : 25mm below
             4th quadrant

2) Q : VP. 200mm in front
        HP : 35mm above 1st quadrant

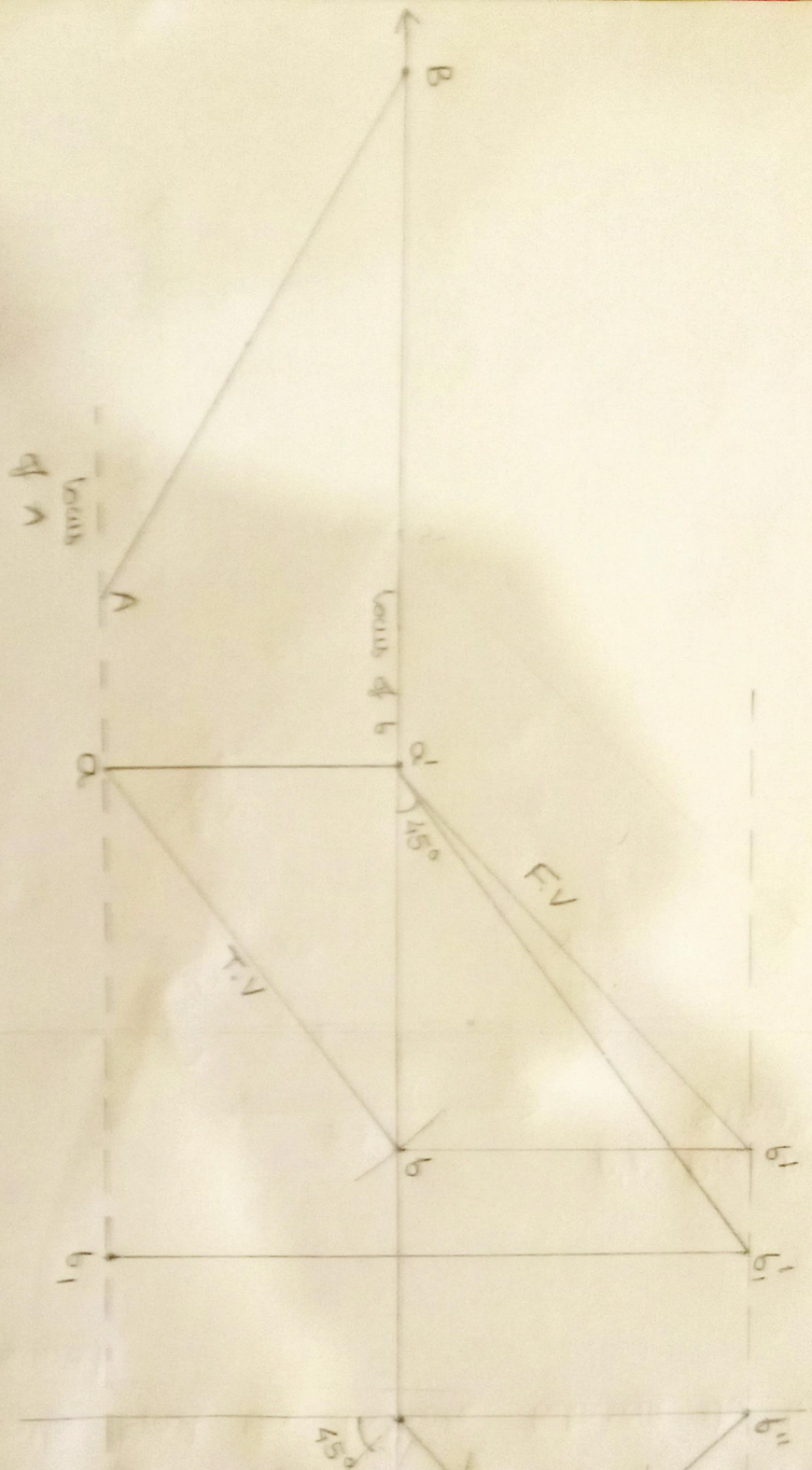3) R. VP. 20mm in front
       HP: In HP
          1st / 4th quadrant

3) The right profile (or side view) of a line AB 80 mm long makes an angle of 30° to XY line. Draw the top and front views of the line when the length of profile view is 50mm. Take the point A to be 15mm above HP and 60mm infront of VP and point B being closet to VP
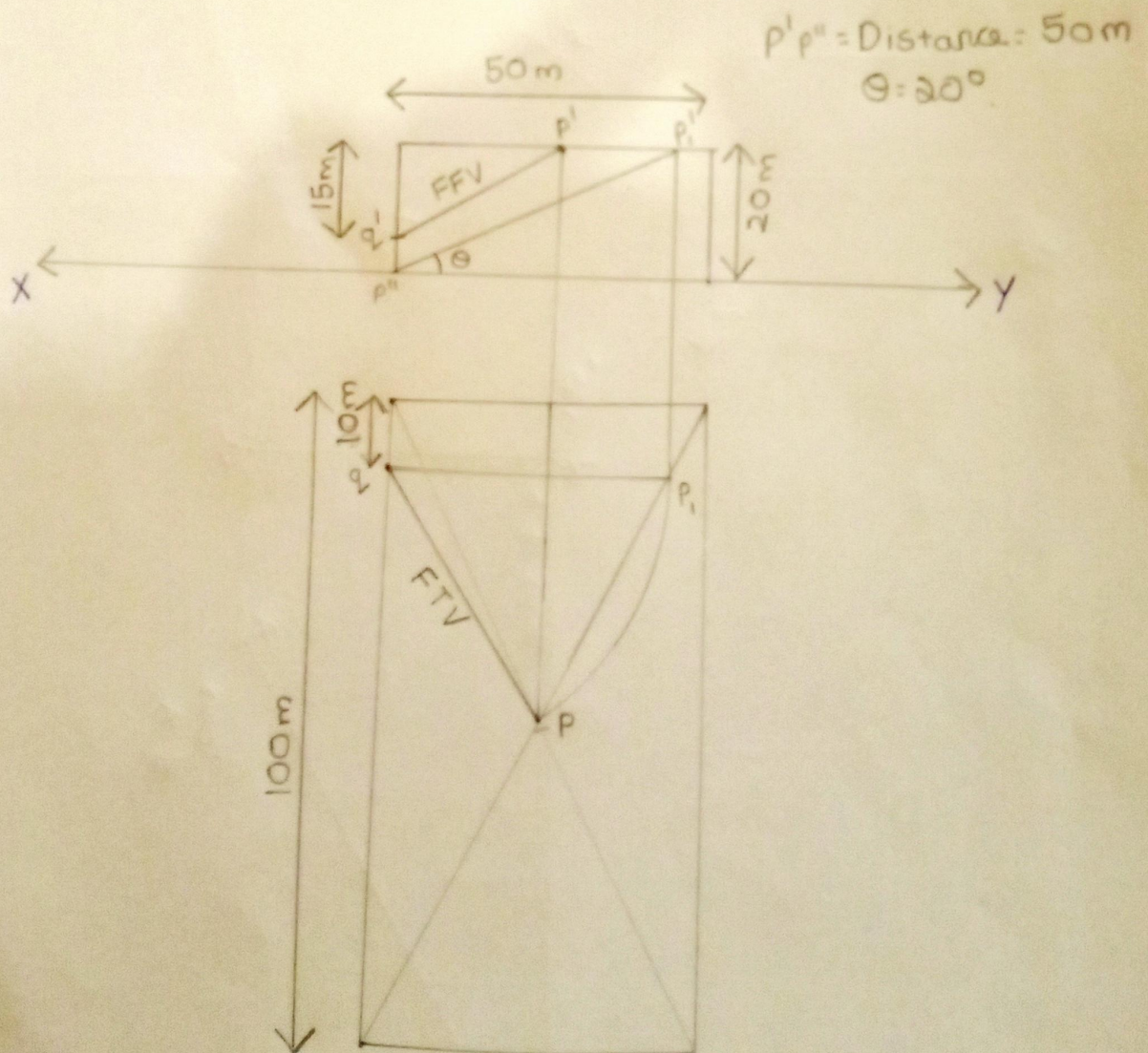
X_1

b"

a" 30°

VP
X HP

45°

FRONT VIEW

a'   b'   b₁'

15

b₂'

b   b₁

60

TOP VIEW

a   b₂

Y_1

4) Draw the projections of a straight line AB, 100mm long inclined at 45° to HP and 30° to VP. The end A is in HP and the end B in VP. Find the shortest distance between the straight line AB and the line of intersection of plane of projection.

d = 40 mm

• An auditorium of a college is having 100m length, 50m width and 20m height. One of the light points is fitted at the center of the roof and its switch is kept on one of the side walls of the auditorium, 2m above the floor and at a distance of 10m from one of the adjacent walls. Find the distance between the light point and its switch.

$p' p'' = Distance = 50m$

$\theta = 20°$

6) Line EF has end E, 10mm above HP and 15mm in front of VP. End F is 45mm above HP and the front view measures 60mm. The line is inclined at 30° to VP. Draw its projection, determine its true length, inclination with HP and distance between end projectors of the line.

→

True length: 70mm
Inclination with HP: 35°
Distance between end projectors = 50mm