Q1

PROJECTION OF LINES

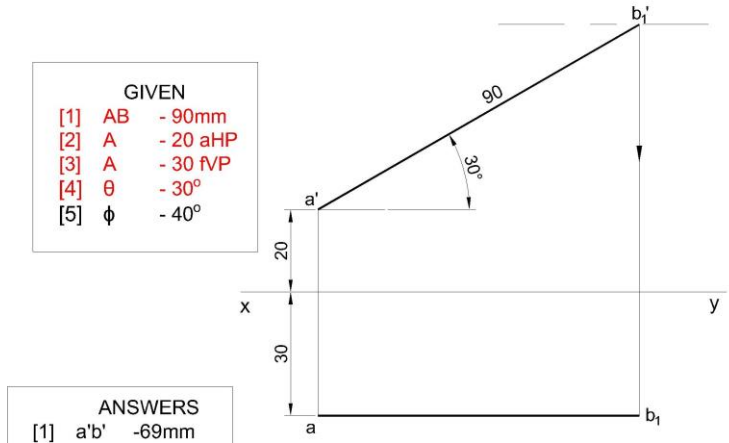
LINE ROTATION METHOD -FIRST QUADRANT

1 GIVEN: FIRST QUADRANT; LOCATION OF ONE POINT; TRUE INCLINATIONS; TRUE LENGTH

Draw the projection of the line AB 90mm inclined 30º to HP and 40º to VP. The end A of the line is 20mm above the HP and 30mm in front VP. Also locate the traces.

SUMESH 8848440142

[1] AB -90mm, [2] $\theta = 30^0$, [3] $\phi = 40^0$, [4] A -20 aHP , [5] A -30 fVP



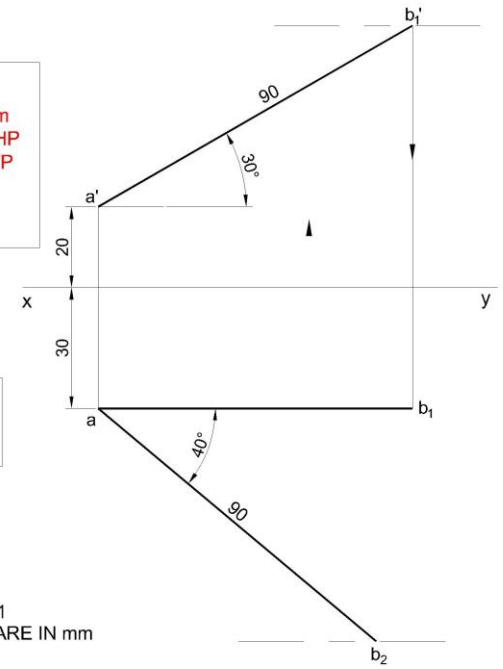
See YouTube Channel Graphicszone2021 for videos

1.1

SCALE 1:1
ALL DIMENSIONS ARE IN mm

1

GIVEN
[1] AB - 90mm
[2] A - 20 aHP
[3] A - 30 fVP
[4] θ - 30°
[5] ϕ - 40°



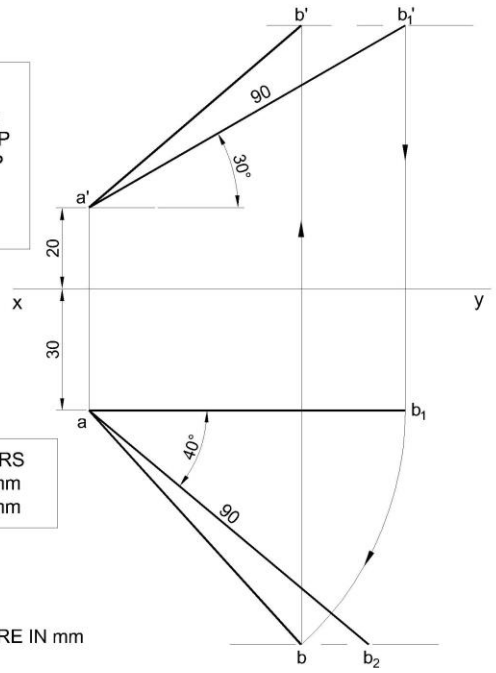
ANSWERS
[1] a'b' -69mm
[2] ab -78mm

1.2

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

GIVEN
[1] AB - 90mm
[2] A - 20 aHP
[3] A - 30 fVP
[4] θ - 30°
[5] ϕ - 40°



ANSWERS
[1] a'b' -69mm
[2] ab -78mm

1.3

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q2

PROJECTION OF LINES

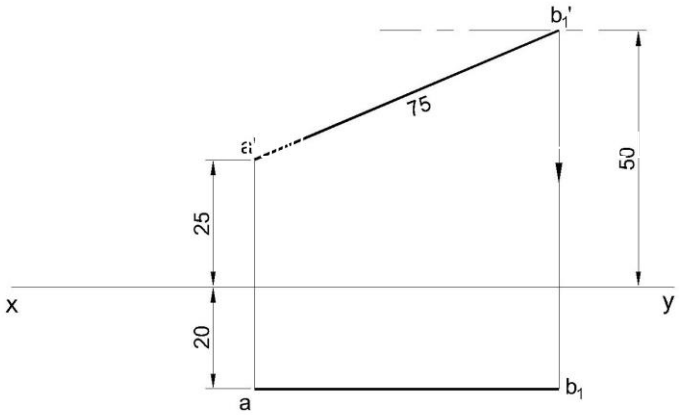
LINE ROTATION METHOD –FIRST QUADRANT

2 GIVEN: FIRST QUADRANT; LOCATION OF ONE POINT; LOCUS OF SECOND POINT; TRUE LENGTH

A line AB measuring 75mm has its end A, 20mm in front of VP and 25mm above HP and other end B is 65mm in front of VP and 50mm above HP. Draw the projections of the line and find the inclinations of the line with both the reference planes of projection. Also find the length of top and front views and locate its traces.

SUMESH 8848440142

[1] AB -75mm, [2]A -25 aHP, [3]A -20 fVP, [4] B -50 aHP , [5] B -65 fVP



GIVEN

[1]	AB	- 75mm
[2]	A	- 25 aHP
[3]	A	- 20 fVP
[4]	B	- 50 aHP
[5]	B	- 65 fVP

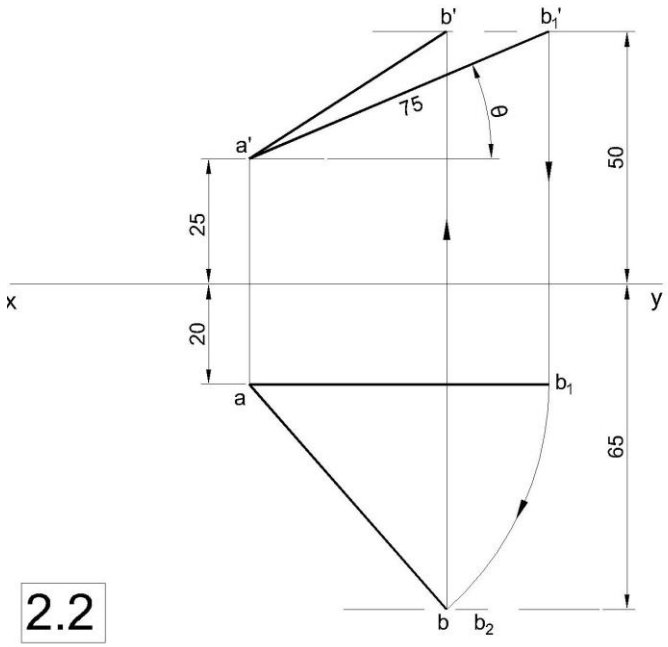
ANSWERS

[1]	a'b'	- 47mm
[2]	ab	- 60mm
[3]	v-VT	- 14mm
[4]	h'-HT	- 24mm
[5]	θ	- 23°
[6]	ø	- 44°

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

2.1



2.2

GIVEN

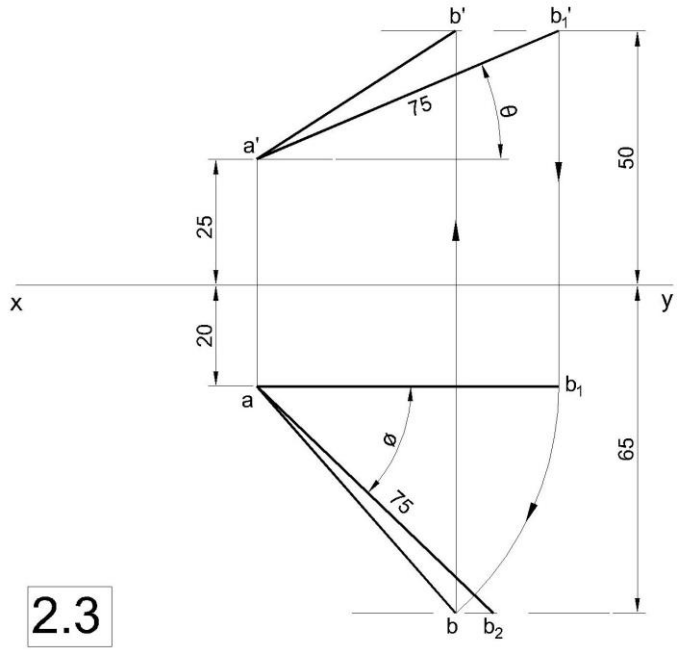
[1]	AB	- 75mm
[2]	A	- 25 aHP
[3]	A	- 20 fVP
[4]	B	- 50 aHP
[5]	B	- 65 fVP

ANSWERS

[1]	a'b'	- 47mm
[2]	ab	- 60mm
[3]	v-VT	- 14mm
[4]	h'-HT	- 24mm
[5]	θ	- 23°
[6]	ø	- 44°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



2.3

GIVEN

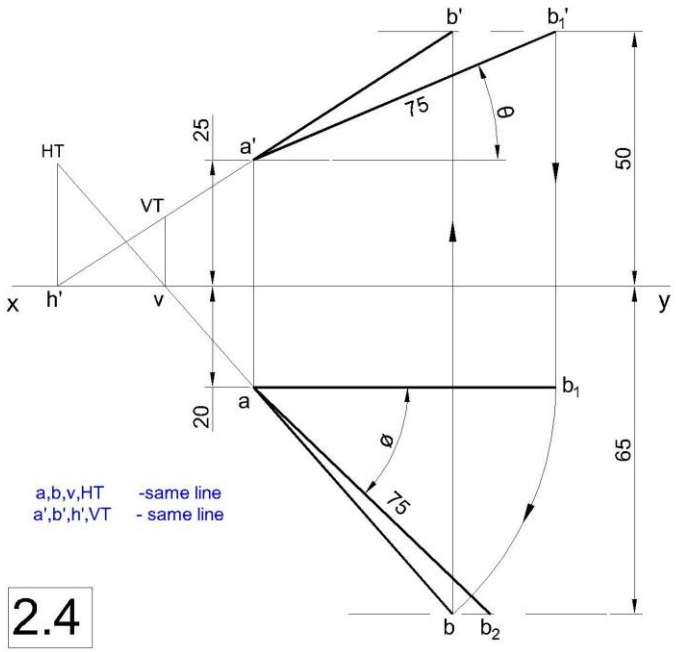
[1]	AB	- 75mm
[2]	A	- 25 aHP
[3]	A	- 20 fVP
[4]	B	- 50 aHP
[5]	B	- 65 fVP

ANSWERS

[1]	a'b'	- 47mm
[2]	ab	- 60mm
[3]	v-VT	- 14mm
[4]	h'-HT	- 24mm
[5]	θ	- 23°
[6]	ø	- 44°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



2.4

GIVEN
[1] AB - 75mm
[2] A - 25 aHP
[3] A - 20 fVP
[4] B - 50 aHP
[5] B - 65 fVP

ANSWERS
[1] a'b' - 47mm
[2] ab - 60mm
[3] v-VT - 14mm
[4] h'-HT - 24mm
[5] θ - 23°
[6] ø - 44°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q3

PROJECTION OF LINES

LINE ROTATION METHOD-FIRST & SECOND QUADRANT

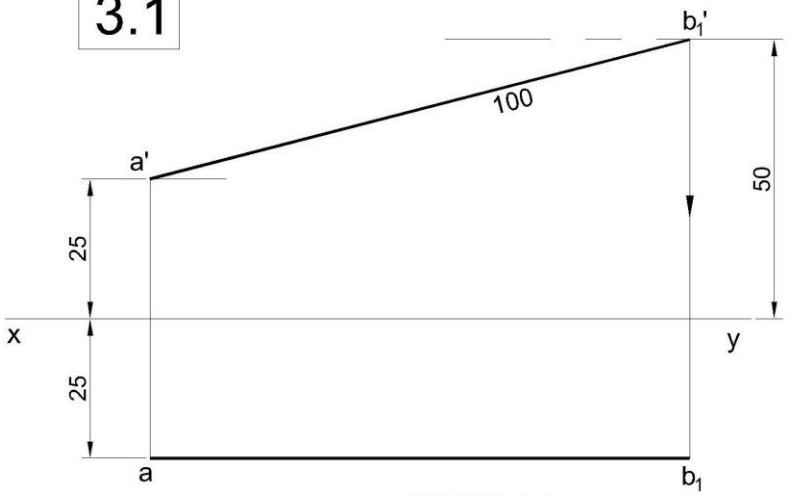
3 GIVEN: FIRST & SECOND QUADRANT; LOCATION OF ONE POINT; LOCUS OF SECOND POINT; TRUE LENGTH

A line AB 100mm long has its end A in the first quadrant, 25mm from both HP and VP and the other end B in the second quadrant 50mm from both HP and VP. Draw its projections and determine its traces and inclinations to HP and VP.

SUMESH 8848440142

[1] AB -100mm, [2]A -25 aHP, [3]A -25 fVP, [4] B -50 aHP , [5] B -50 bVP

3.1



SCALE 1:1
ALL DIMENSIONS ARE IN mm

GIVEN

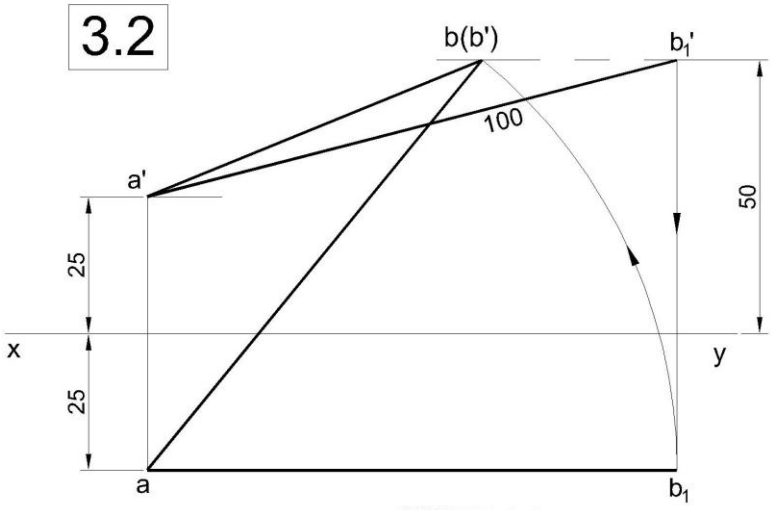
[1]	AB	- 100 mm
[2]	A	- 25 aHP
[3]	A	- 25 fVP
[4]	B	- 50 aHP
[5]	B	- 50 bVP

ANSWERS

[1]	a'b'	- 66mm
[2]	ab	- 97mm
[3]	θ	- 14°
[4]	φ	- 49°

See YouTube Channel Graphicszone2021 for videos

3.2



SCALE 1:1
ALL DIMENSIONS ARE IN mm

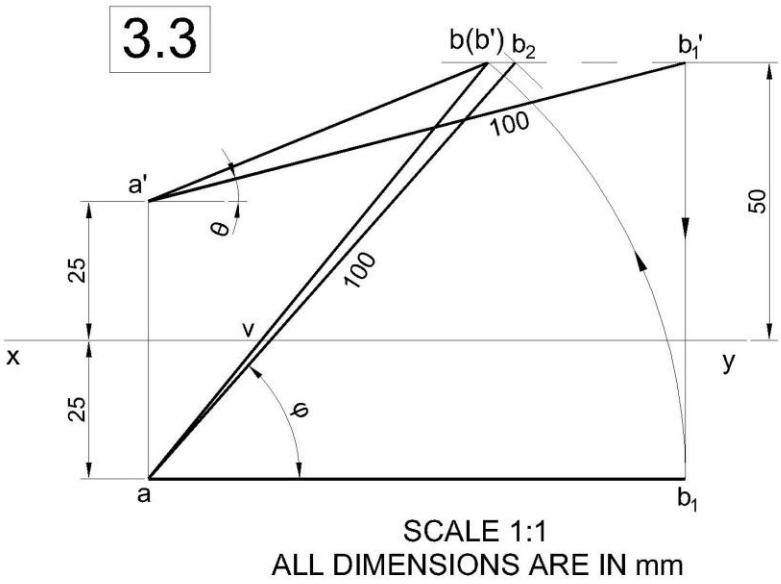
GIVEN

[1]	AB	- 100 mm
[2]	A	- 25 aHP
[3]	A	- 25 fVP
[4]	B	- 50 aHP
[5]	B	- 50 bVP

ANSWERS

[1]	a'b'	- 66mm
[2]	ab	- 97mm
[3]	θ	- 14°
[4]	φ	- 49°

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	AB	- 100 mm
[2]	A	- 25 aHP
[3]	A	- 25 fVP
[4]	B	- 50 aHP
[5]	B	- 50 bVP

ANSWERS

[1]	a'b'	- 66mm
[2]	ab	- 97mm
[3]	θ	- 14°
[4]	φ	- 49°

See YouTube Channel Graphicszone2021 for videos

Q210

PROJECTION OF LINES

LINE ROTATION METHOD – SECOND QUADRANT

4 **GIVEN: TRUE LENGTH; TRUE INCLINATIONS; LOCATION OF ONE POINT**

A straight line PQ is 100mm long. The end P is in HP and 20mm in front of VP. The line PQ is inclined 30° to HP and 20° to VP. Draw the projections of the line if the end Q is in second quadrant.

SUMESH 8848440142

[1] P - on HP, [2] P – 20 fVP, [3] θ -30° [4] φ -20°, [5] PQ – 100 mm

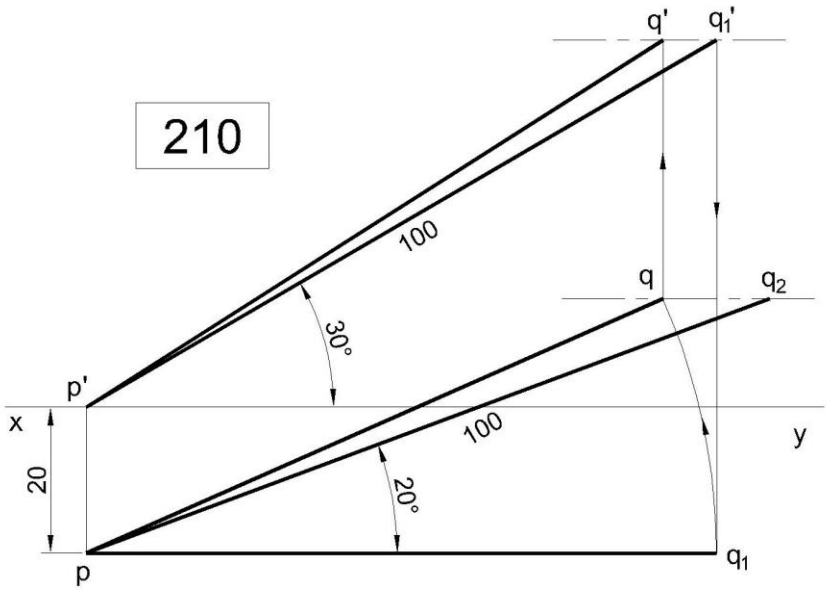
GIVEN

[1] PQ - 100mm
[2] P - on HP
[3] P - 20 fVP
[4] θ - 30°
[5] φ - 20°

Q is in Second Quadrant

ANSWERS

[1] pq - 86mm
[2] p'q' - 94mm



Q4

PROJECTION OF LINES

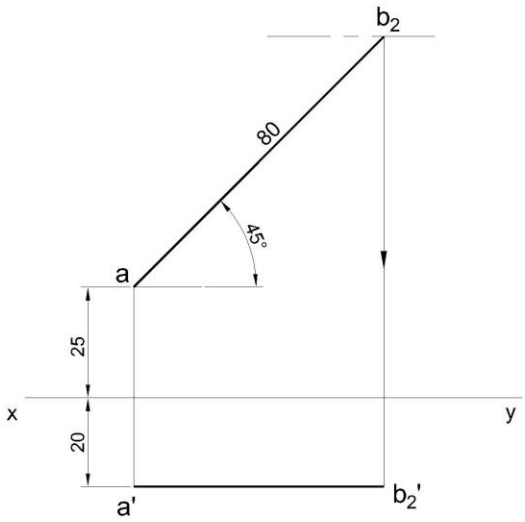
LINE ROTATION METHOD -THIRD QUADRANT

5 GIVEN: THIRD QUADRANT; LOCATION OF ONE POINT; TRUE INCLINATIONS; TRUE LENGTH

Draw the projection of the line AB 80mm inclined 30° to HP and 45° to VP. The end A of the line is 20mm below the HP and 25mm behind the VP. Also locate the traces.

SUMESH 8848440142

[1] AB -80mm, [2] $\theta = 30^0$, [3] $\phi = 45^0$, [4] A -20 bHP , [5] A -25 bVP



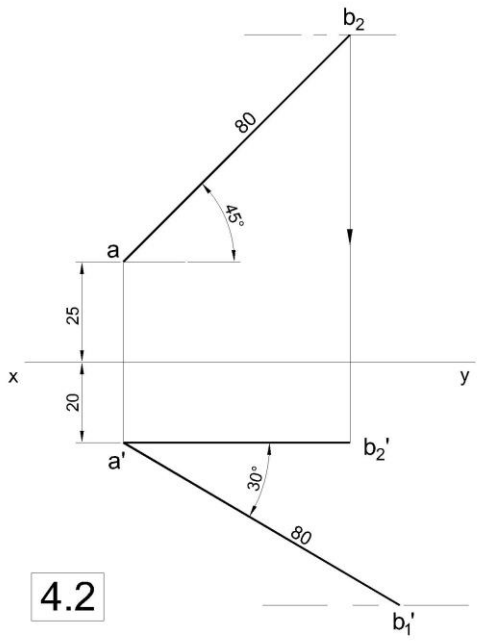
GIVEN
[1] AB - 80mm
[2] A - 20 bHP
[3] A - 25 bVP
[4] θ - 30°
[5] ϕ - 45°

ANSWERS
[1] a'b' - 69mm
[2] ab - 56mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

4.1



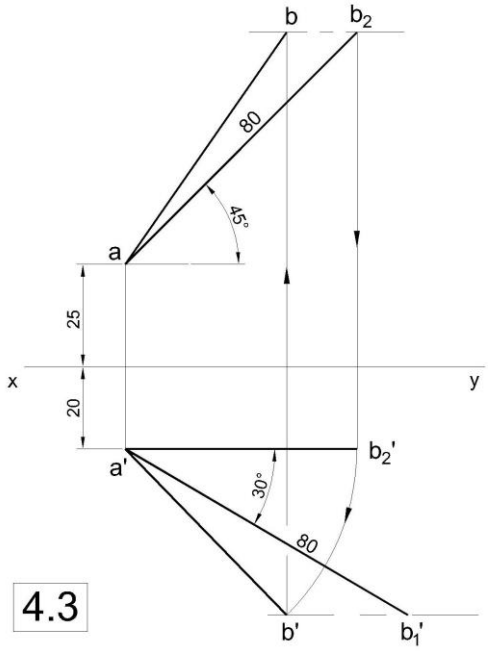
GIVEN
[1] AB - 80mm
[2] A - 20 bHP
[3] A - 25 bVP
[4] θ - 30°
[5] ϕ - 45°

ANSWERS
[1] a'b' - 69mm
[2] ab - 56mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

4.2



GIVEN

[1] AB - 80mm
[2] A - 20 bHP
[3] A - 25 bVP
[4] θ - 30°
[5] ϕ - 45°

ANSWERS

[1] a'b' - 69mm
[2] ab - 56mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q5

PROJECTION OF LINES

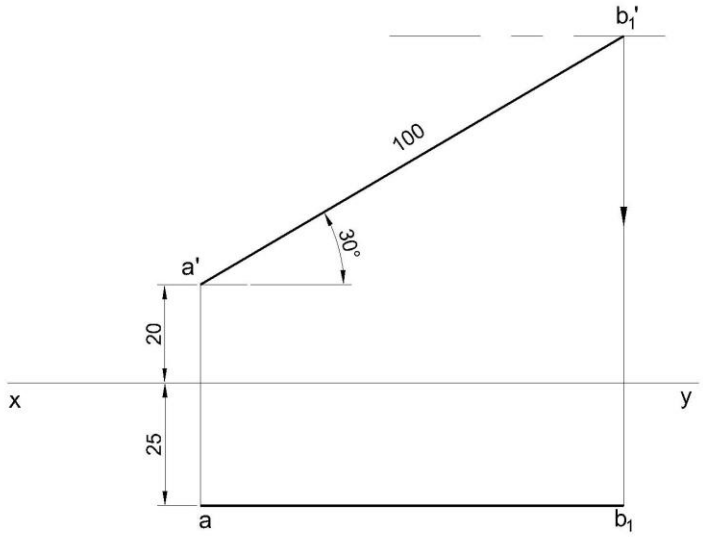
LINE ROTATION METHOD –FIRST & SECOND QUADRANT

6 **GIVEN: LOCATION OF ONE POINT; TRUE INCLINATIONS; TRUE LENGTH**

One end of the line AB, 100mm long, is 20mm above HP and 25mm in front of VP. The line is inclined 30° to HP and 45° to VP. Draw the projections of the line if **A lies in the first quadrant and B lies in the second quadrant.** Also indicate the traces of the line.

SUMESH 8848440142

[1] AB -100mm, [2] $\theta = 30^0$, [3] $\phi = 45^0$, [4] A -20 aHP , [5] A -25 fVP



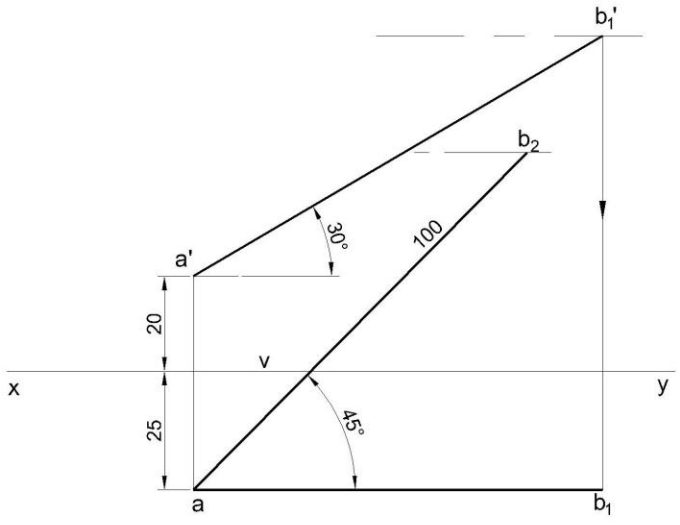
GIVEN
[1] AB - 100mm
[2] A - 20 aHP
[3] A - 25 fVP
[4] θ - 30°
[5] ϕ - 45°

ANSWERS
[1] a'b' - 70mm
[2] ab - 86mm
[3] v-VT - 38mm
[4] h'-HT - 53mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

5.1



GIVEN
[1] AB - 100mm
[2] A - 20 aHP
[3] A - 25 fVP
[4] θ - 30°
[5] ϕ - 45°

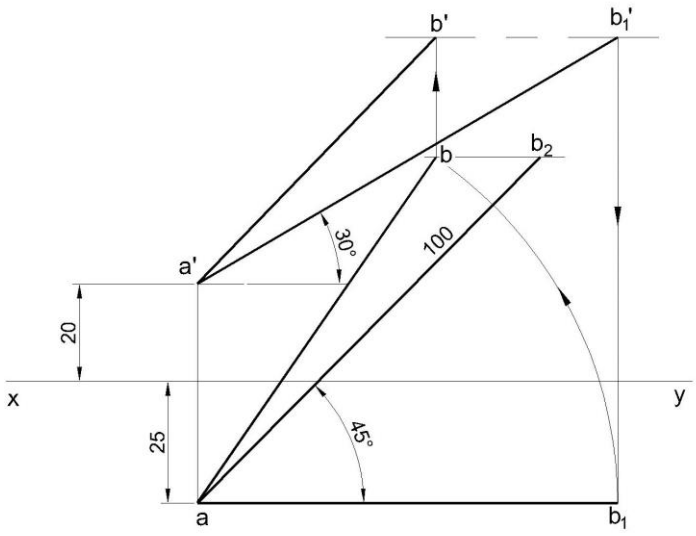
ANSWERS
[1] a'b' - 70mm
[2] ab - 86mm
[3] v-VT - 38mm
[4] h'-HT - 53mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

5.2

A lies in the first quadrant and B lies in the second quadrant.



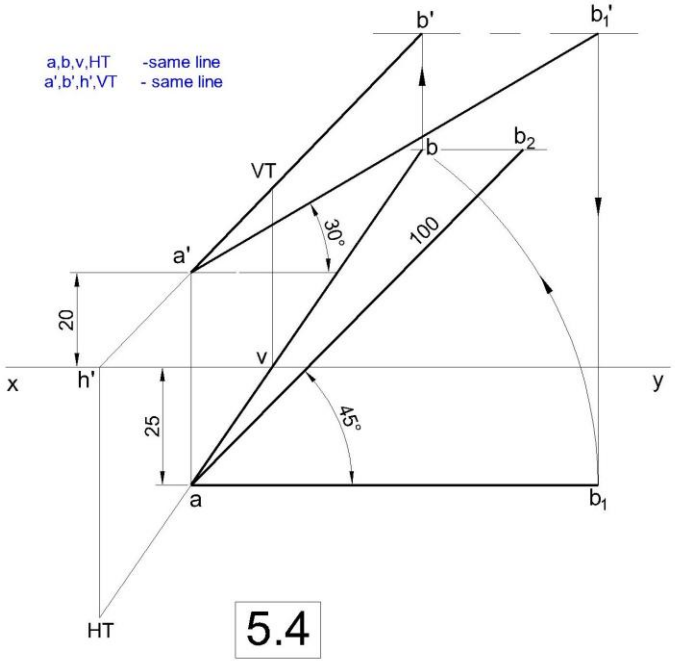
GIVEN		
[1]	AB	- 100mm
[2]	A	- 20 aHP
[3]	A	- 25 fVP
[4]	θ	- 30°
[5]	ϕ	- 45°

ANSWERS		
[1]	a'b'	- 70mm
[2]	ab	- 86mm
[3]	v-VT	- 38mm
[4]	h'-HT	- 53mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

5.3



GIVEN		
[1]	AB	- 100mm
[2]	A	- 20 aHP
[3]	A	- 25 fVP
[4]	θ	- 30°
[5]	ϕ	- 45°

ANSWERS		
[1]	a'b'	- 70mm
[2]	ab	- 86mm
[3]	v-VT	- 38mm
[4]	h'-HT	- 53mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

5.4

Q6

PROJECTION OF LINES

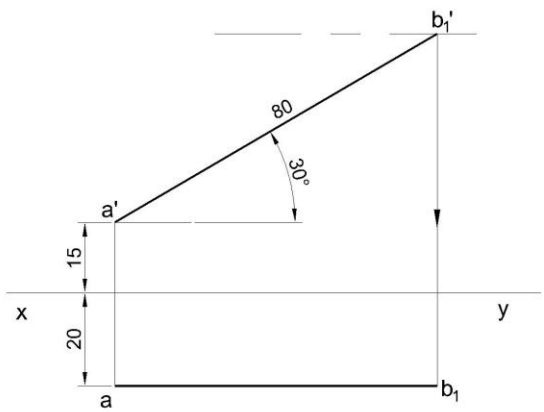
LINE ROTATION - FRONT VIEW, θ

7 GIVEN: LOCATION OF ONE POINT; TRUE INCLINATION WITH HP (θ); TRUE LENGTH; FRONT VIEW

A line AB, 80 mm long, is inclined at 30° to the HP. Its end A is 15mm above the HP and 20mm in front of the VP. Its front view measures 60mm. Draw the top view of AB and determine its inclination with VP.

SUMESH 8848440142

[1] AB -80mm, [2] $\theta = 30^0$, [3] A -15 aHP, [4] A -20 fVP, [5] FV -60mm



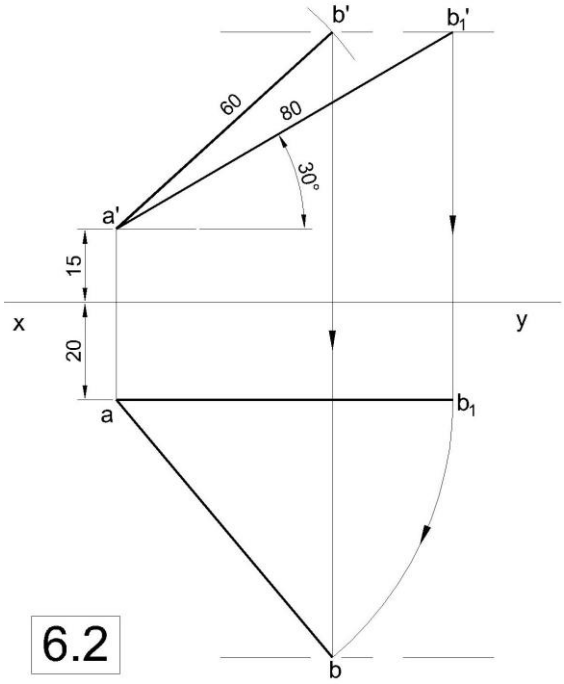
GIVEN
[1] AB - 80mm
[2] A - 15 aHP
[3] A - 20 fVP
[4] θ - 30°
[5] FV - 60mm

ANSWERS
[1] ab - 69mm
[2] ϕ - 41°

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

6.1



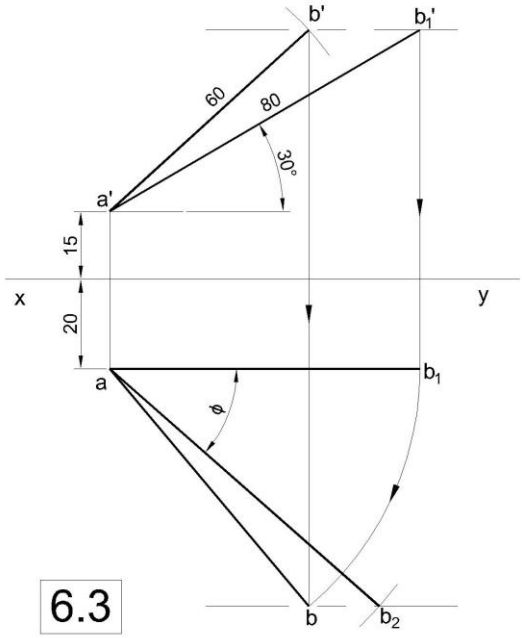
6.2

GIVEN
[1] AB - 80mm
[2] A - 15 aHP
[3] A - 20 fVP
[4] θ - 30°
[5] FV - 60mm

ANSWERS
[1] ab - 69mm
[2] ϕ - 41°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



6.3

GIVEN
[1] AB - 80mm
[2] A - 15 aHP
[3] A - 20 fVP
[4] θ - 30°
[5] FV - 60mm

ANSWERS
[1] ab - 69mm
[2] ϕ - 41°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q7

PROJECTION OF LINES

FIRST & FOURTH QUADRANT, PLAN

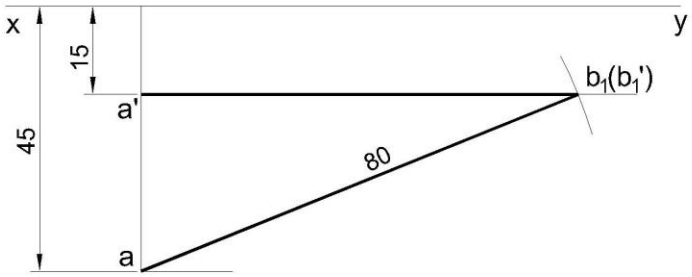
8 GIVEN: LOCATION OF ONE POINT; TRUE LENGTH; TOP VIEW (PLAN)

The top view of 80mm long line AB measures 55mm. A is 45mm in front of VP and 15mm below HP. B is 15mm in front of VP and is above HP. Draw the front view of AB and find its inclination with HP and VP.

SUMESH 8848440142

[1] AB -80mm, [2] A -15 bHP , [3] A -45 fVP, [4] B -15 fVP, [5] TV -55mm

7.1



GIVEN

[1]	AB	- 80mm
[2]	A	- 15 bHP
[3]	A	- 45 fVP
[4]	B	- 15 fVP
[5]	TV	- 55mm

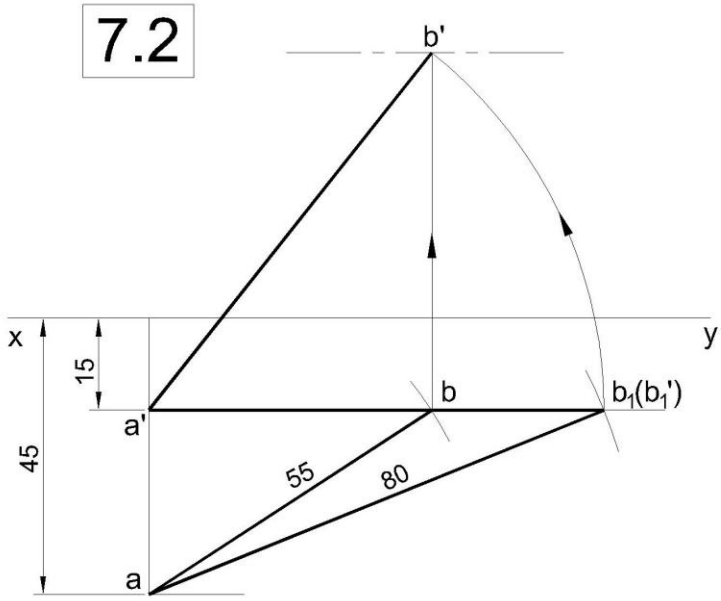
ANSWERS

[1]	a'b'	- 74mm
[2]	ϕ	- 22°
[3]	θ	- 47°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

7.2



GIVEN

[1]	AB	- 80mm
[2]	A	- 15 bHP
[3]	A	- 45 fVP
[4]	B	- 15 fVP
[5]	TV	- 55mm

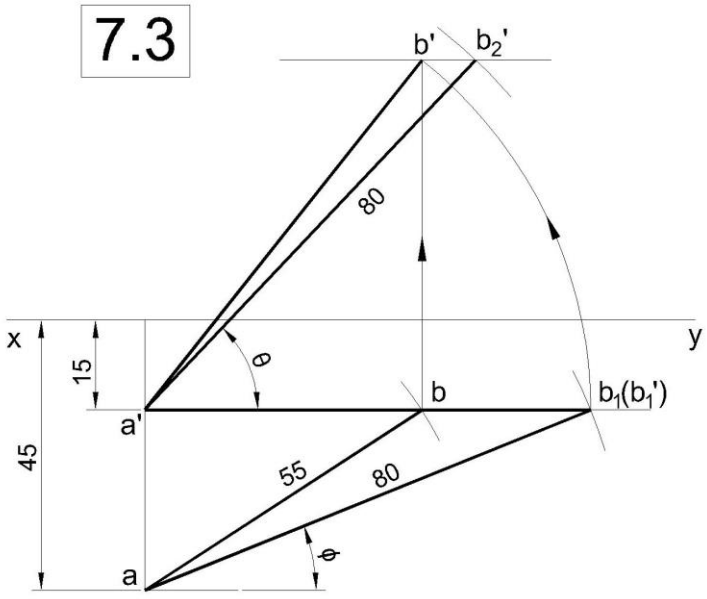
ANSWERS

[1]	a'b'	- 74mm
[2]	ϕ	- 22°
[3]	θ	- 47°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

7.3



GIVEN

[1]	AB	- 80mm
[2]	A	- 15 bHP
[3]	A	- 45 fVP
[4]	B	- 15 fVP
[5]	TV	- 55mm

ANSWERS

[1]	a'b'	- 74mm
[2]	ϕ	- 22°
[3]	θ	- 47°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q8

PROJECTION OF LINES

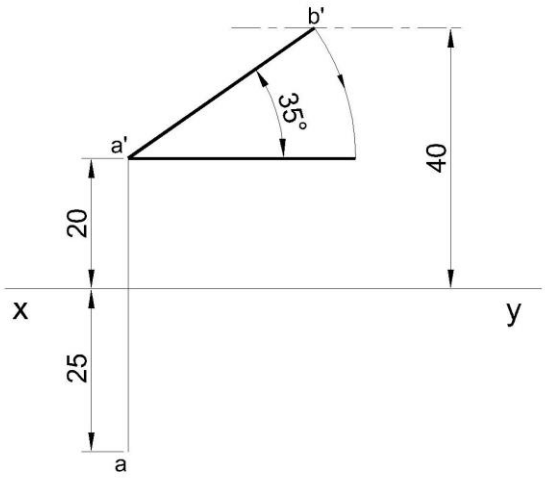
APPARENT INCLINATIONS GIVEN

9 GIVEN: LOCATION OF ONE POINT; INCLINATIONS OF TOP VIEW AND FRONT VIEW

The front and top views of a line are inclined at 35° and 45° respectively to xy –line. One end of the line is 20mm above the HP and 25mm front of VP while the other end is 40 mm above HP. Draw the projections of the line and find the true length and inclinations of the line with HP and VP.

SUMESH 8848440142

[1] α -35°, [2] β -45°, [3] A -20 aHP, [4] A -25 fVP [5] B -40 aHP,



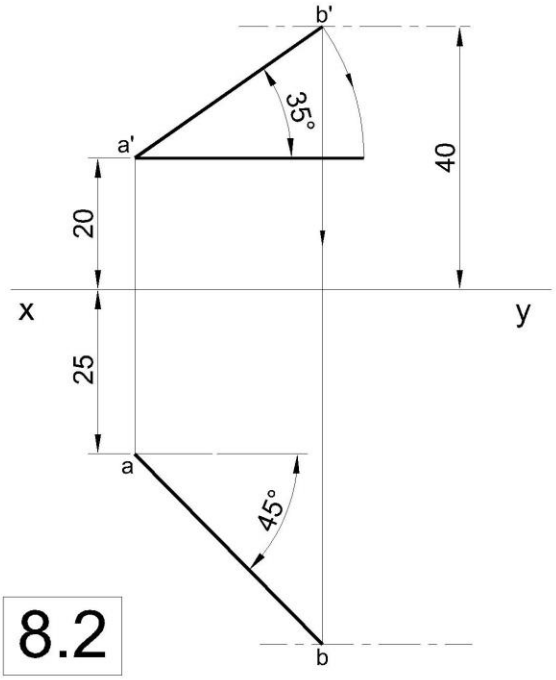
GIVEN		
[1]	α	- 35°
[2]	β	- 45°
[3]	A	- 20 aHP
[4]	A	- 25 fVP
[5]	B	- 40 aHP

ANSWERS		
[1]	AB	- 45mm
[2]	a'b'	- 35mm
[3]	ab	- 41mm
[4]	ϕ	- 40°
[5]	θ	- 26°

See YouTube Channel Graphicszone2021 for videos

8.1

SCALE 1:1
ALL DIMENSIONS ARE IN mm



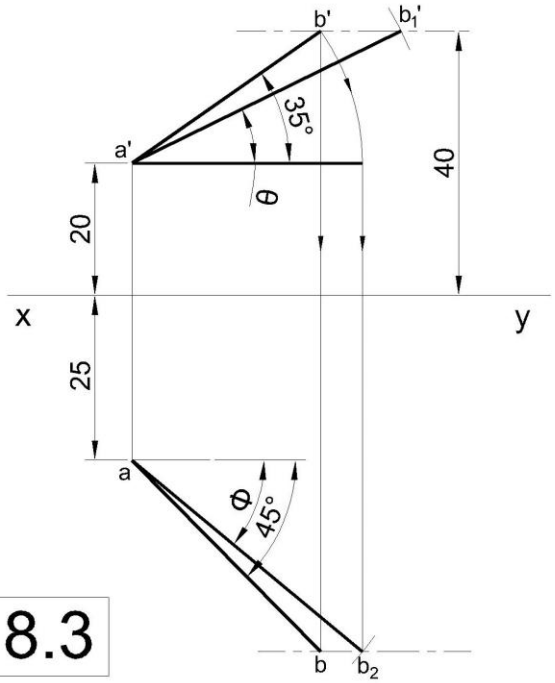
8.2

GIVEN		
[1]	α	- 35°
[2]	β	- 45°
[3]	A	- 20 aHP
[4]	A	- 25 fVP
[5]	B	- 40 aHP

ANSWERS		
[1]	AB	- 45mm
[2]	a'b'	- 35mm
[3]	ab	- 41mm
[4]	ϕ	- 40°
[5]	θ	- 26°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



8.3

GIVEN		
[1]	α	- 35°
[2]	β	- 45°
[3]	A	- 20 aHP
[4]	A	- 25 fVP
[5]	B	- 40 aHP

ANSWERS		
[1]	AB	- 45mm
[2]	a'b'	- 35mm
[3]	ab	- 41mm
[4]	ϕ	- 40°
[5]	θ	- 26°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q191

PROJECTION OF LINES

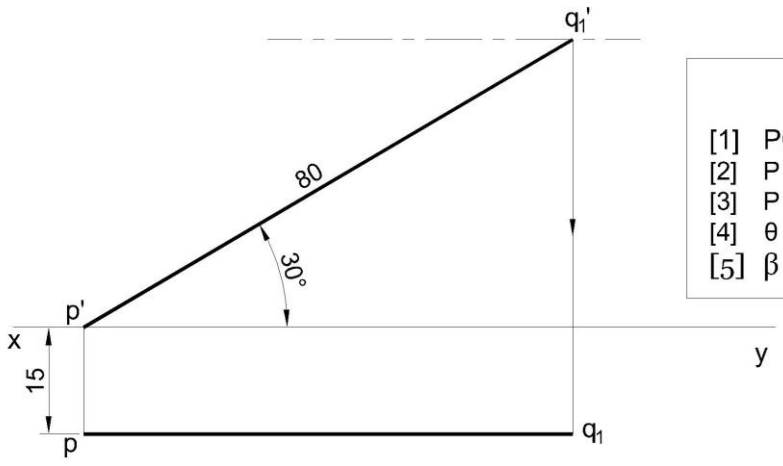
GIVEN INCLINATIONS OF PLAN (β) AND θ

10 **GIVEN: INCLINATIONS OF PLAN; TRUE INCLINATION WITH HP; TRUE LENGTH**

A line PQ 80 mm long is inclined to the HP is at 30°. Its plan makes an angle of 60° with the xy-line. Draw its projections and determine the inclination with VP, If the point P on HP and 15mm front of VP.

SUMESH 8848440142

[1] β -60°, [2] θ -30°, [3] PQ-80mm , [4] P –on HP, [5] P -15 fVP

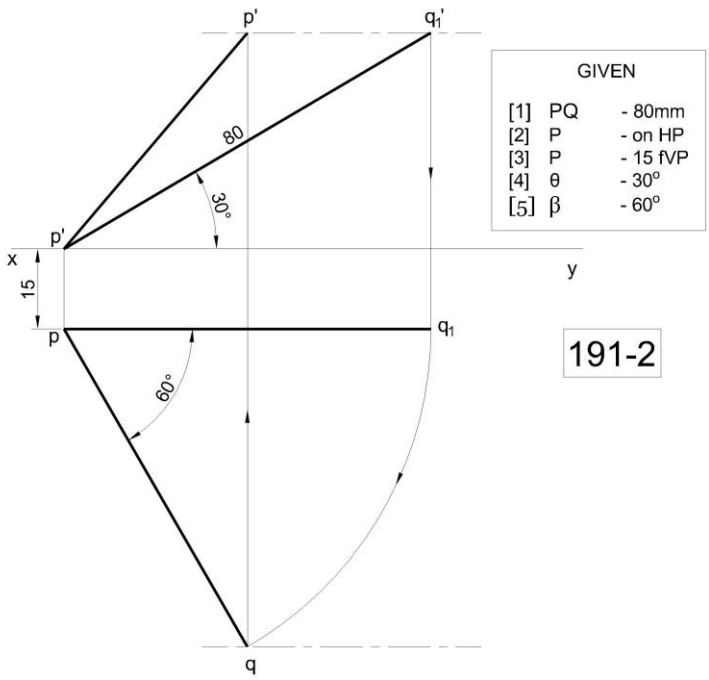


GIVEN

[1]	PQ	- 80mm
[2]	P	- on HP
[3]	P	- 15 fVP
[4]	θ	- 30°
[5]	β	- 60°

See YouTube Channel Graphicszone2021 for videos

191-1

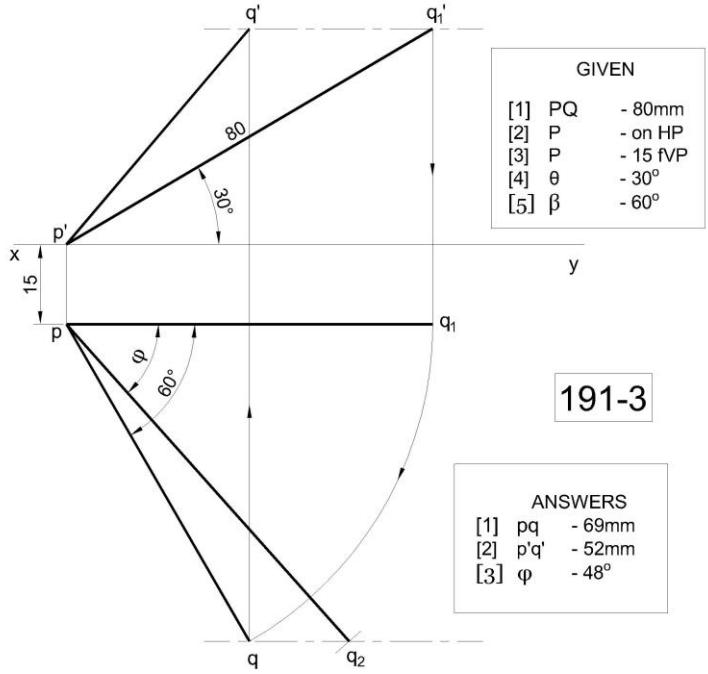


GIVEN

[1] PQ - 80mm
[2] P - on HP
[3] P - 15 fVP
[4] θ - 30°
[5] β - 60°

191-2

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] PQ - 80mm
[2] P - on HP
[3] P - 15 fVP
[4] θ - 30°
[5] β - 60°

191-3

ANSWERS

[1] pq - 69mm
[2] p'q' - 52mm
[3] φ - 48°

See YouTube Channel Graphicszone2021 for videos

Q9

PROJECTION OF LINES

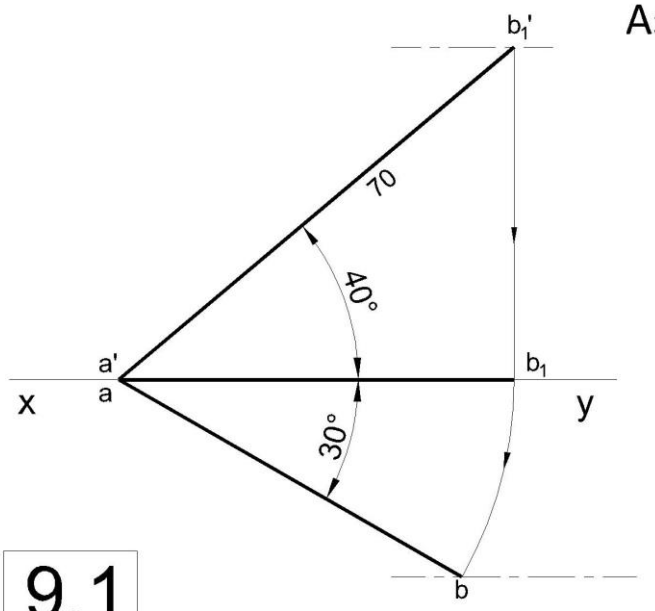
ONLY 3 DATAS GIVEN INCLINATIONS OF PLAN (β) AND θ

11 GIVEN: INCLINATIONS OF PLAN; TRUE INCLINATION WITH HP; TRUE LENGTH

A line AB 70mm long is inclined to the HP is at 40°. Its plan makes an angle of 30° with the xy-line. Draw its projections and determine the inclination with VP.

SUMESH 8848440142

[1] β -30°, [2] θ -40°, [3] AB-70mm



9.1

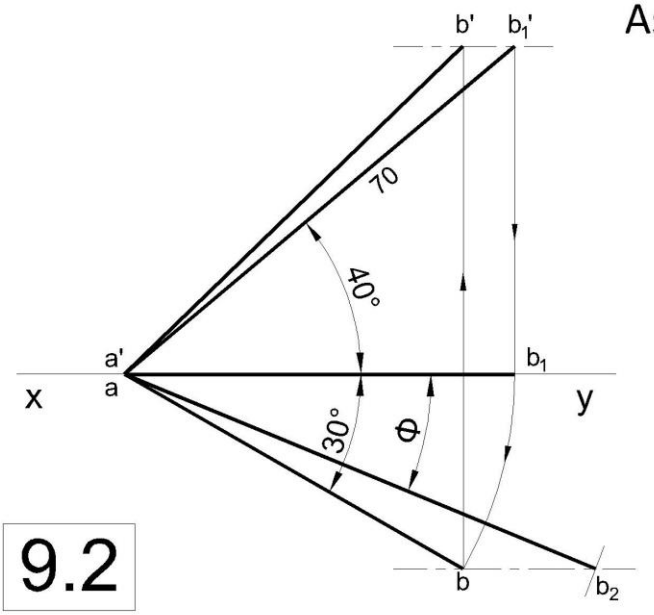
Assume missing Conditions

GIVEN		
[1]	θ	- 40°
[2]	β	- 30°
[3]	A	- on HP
[4]	A	- on VP
[5]	TL	- 70mm

ANSWERS		
[1]	a'b'	- 65mm
[2]	ab	- 54mm
[3]	ϕ	- 22°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



9.2

Assume missing Conditions

GIVEN		
[1]	θ	- 40°
[2]	β	- 30°
[3]	A	- on HP
[4]	A	- on VP
[5]	TL	- 70mm

ANSWERS		
[1]	a'b'	- 65mm
[2]	ab	- 54mm
[3]	ϕ	- 22°

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

Q204

PROJECTION OF LINES

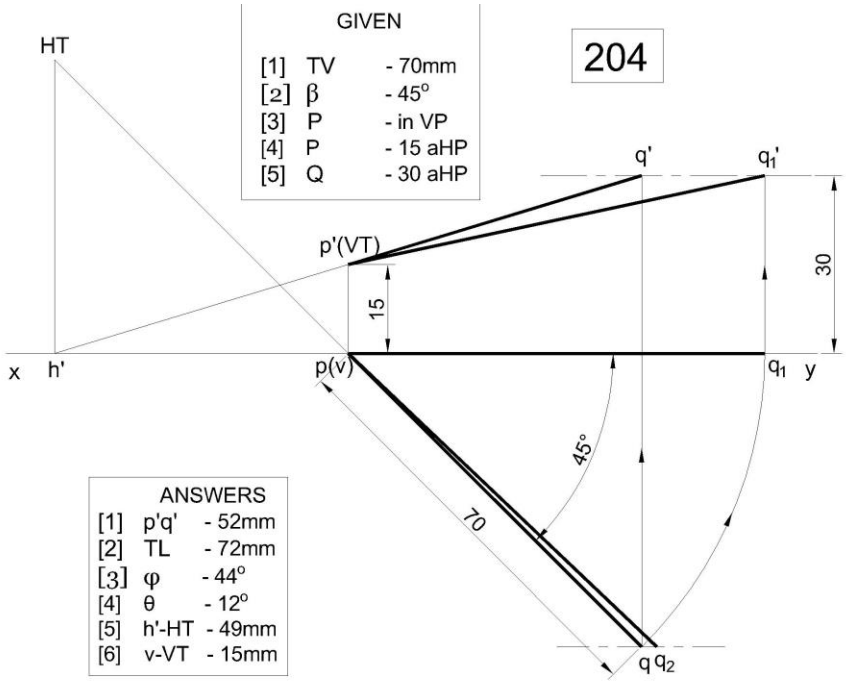
LINE ROTATION METHOD

12 **GIVEN: TOP VIEW; INCLINATION OF TOP VIEW; ONE POINT; LOCUS OF OTHER POINT**

The plan pq of a straight line PQ is 70mm long and makes an angle of 45° with XY. The end P is in VP and 15mm above HP. The end Q is 30mm above HP and the whole line lies in the first quadrant. Draw the projection and obtain i) True length ii) Elevation length iii) Inclination to reference plane iv) Traces

SUMESH 8848440142

[1] TV -70mm , [2] β -45⁰, [3] P- in VP , [4] P –15 aHP, [5] Q -30 aHP



Q10

PROJECTION OF LINES

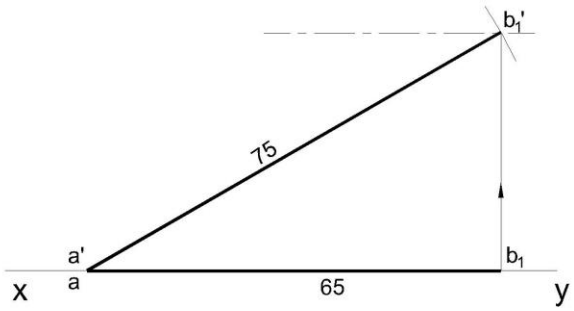
FRONT AND TOP VIEW ARE GIVEN

13 GIVEN: LOCATION OF ONE POINT; TRUE LENGTH; LENGTH OF TOP AND FRONT VIEW

The top and front views of 75mm long line is 65mm and 50mm respectively. Draw the projections if one end is on both HP and VP. Determine the inclinations with HP and VP.

SUMESH 8848440142

[1] AB – 75mm, [2] TV – 65mm , [3] FV – 50mm, [4] A – on HP [5] A -on VP,



GIVEN

[1] TV - 65mm
[2] FV - 50mm
[3] A - on HP
[4] A - on VP
[5] TL - 75mm

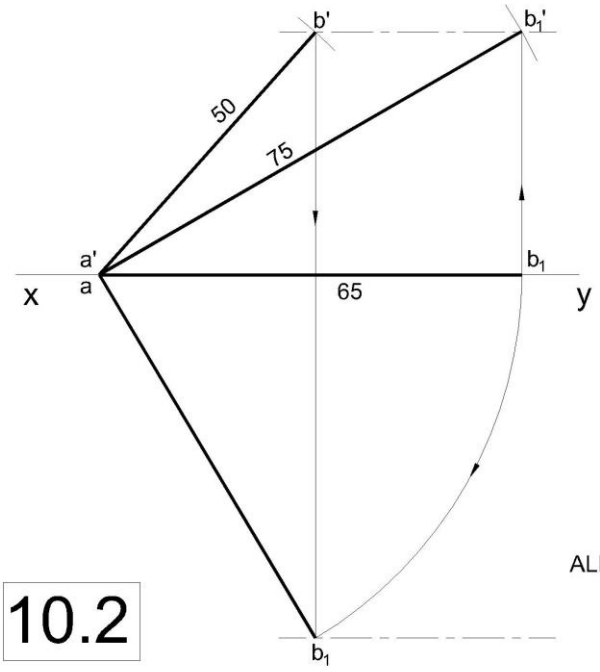
ANSWERS

[1] θ - 30°
[2] ϕ - 48°

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

10.1



GIVEN

[1] TV - 65mm
[2] FV - 50mm
[3] A - on HP
[4] A - on VP
[5] TL - 75mm

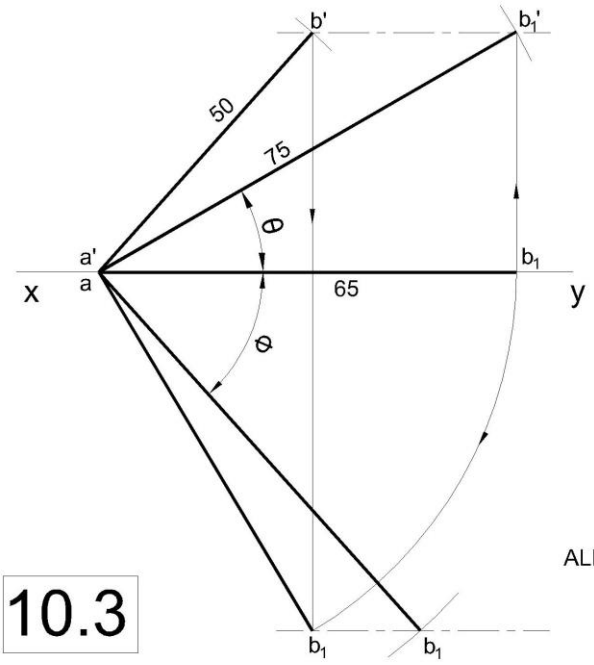
ANSWERS

[1] θ - 30°
[2] ϕ - 48°

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm

10.2



10.3

GIVEN

[1] TV - 65mm
[2] FV - 50mm
[3] A - on HP
[4] A - on VP
[5] TL - 75mm

ANSWERS

[1] θ - 30°
[2] ϕ - 48°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q193

PROJECTION OF LINES

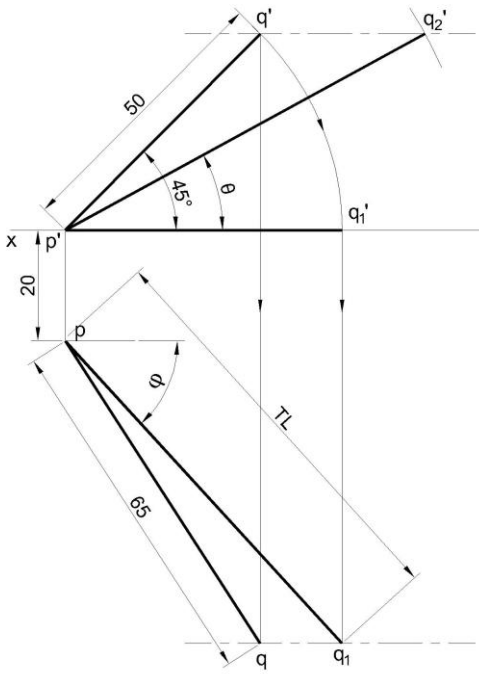
LINE ROTATION METHOD

14 **GIVEN: FRONT AND TOP VIEW; APPARENT INCLINATION OF FV; POSITION OF P**

The front and top views of a straight line PQ measures 50mm and 65mm respectively. The point P is on the HP and 20mm in front of the VP. The front view of the line is inclined at 45° to the reference line. Determine the true length of PQ and its inclinations with the reference planes. Also locate the traces.

SUMESH 8848440142

[1] α -45°, [2] FV-50mm, [3] TV-65mm, [4] P –on HP [5] P -20 fVP,



GIVEN

[1] P - on HP
[2] P - 20 fVP
[3] α - 45°
[4] FV - 50mm
[5] TV - 65mm

193

ANSWERS

[1] TL - 74mm
[2] θ - 29°
[3] φ - 48°

See YouTube Channel Graphicszone2021 for videos

Q11

PROJECTION OF LINES

TOP VIEW AND θ ARE GIVEN

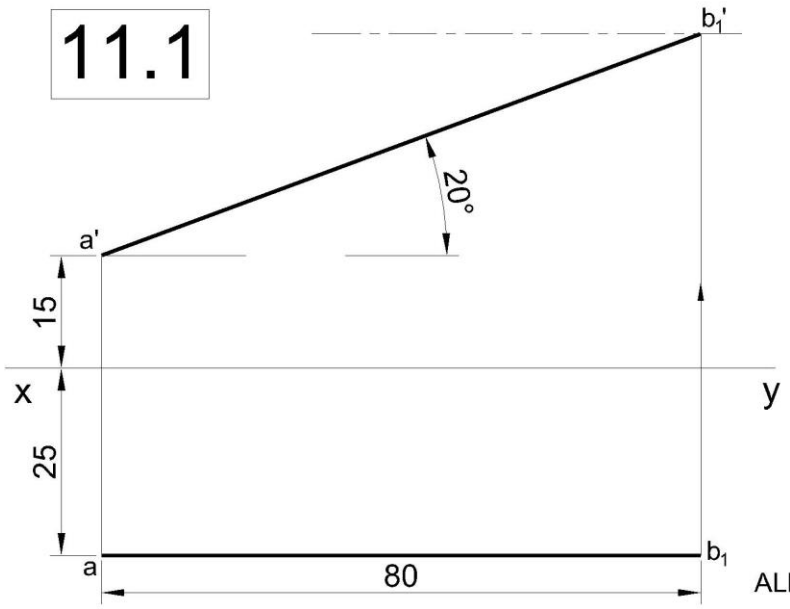
15 GIVEN: LOCATION OF ONE POINT; TRUE LENGTH; LENGTH OF TOP AND FRONT VIEW

The line AB has its end A 25mm in front of VP and 15mm above HP. The line makes an angle 20° with HP and top view measures 80mm. The end B is on second quadrant equidistant from both reference planes. Draw the projection and find the inclination with VP.

SUMESH 8848440142

[1] θ -20°, [2] TV – 80mm, [3] B – Equidistant, [4] A – 15 aHP [5] A -25 fVP,

11.1



GIVEN

[1] TV - 80mm
[2] A - 15 aHP
[3] A - 25 fVP
[4] θ - 20°
[5] b & b' -on same locus

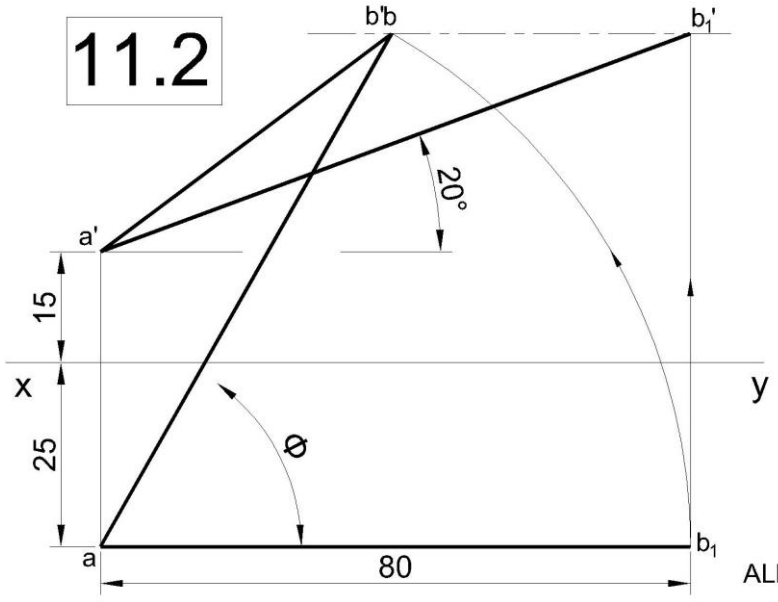
ANSWERS

[1] TL - 85mm
[2] a'b' - 49mm
[3] ϕ - 55°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

11.2



GIVEN

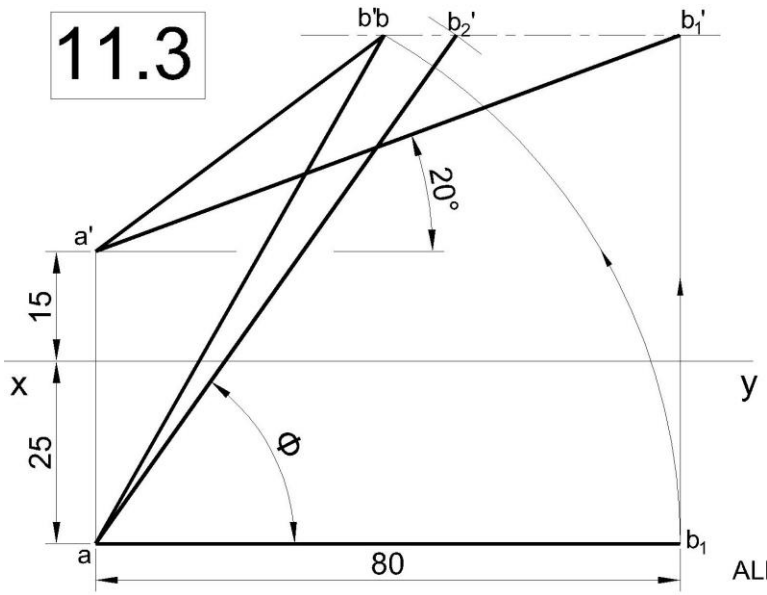
[1] TV - 80mm
[2] A - 15 aHP
[3] A - 25 fVP
[4] θ - 20°
[5] b & b' -on same locus

ANSWERS

[1] TL - 85mm
[2] a'b' - 49mm
[3] ϕ - 55°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] TV - 80mm
[2] A - 15 aHP
[3] A - 25 fVP
[4] θ - 20°
[5] b & b' -on same locus

ANSWERS

[1] TL - 85mm
[2] a'b' - 49mm
[3] ϕ - 55°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q12

PROJECTION OF LINES

PLANE ROTATION – FIRST QUADRANT

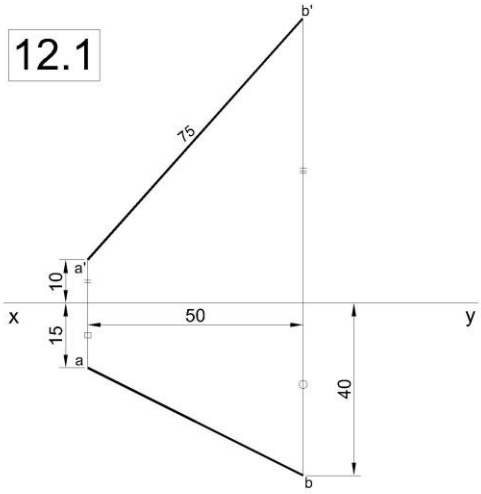
16 GIVEN: LOCATION OF ONE POINT; FRONT VIEW; DISTANCE BETWEEN END PROJECTORS

A line AB has its end A, 10mm above HP and 15mm front of VP. The other end B is 40mm in front of VP and the front view of the line measures 75mm. The distance between the end projectors is 50mm. Draw the projection of the line and find the true inclinations and true length.

SUMESH 8848440142

[1] EP – 50mm , [2] FV – 75mm , [3] B – 40 fVP , [4] A – 10 aHP [5] A -15 fVP,

12.1



GIVEN

[1] FV - 75mm
[2] A - 10 aHP
[3] A - 15 fVP
[4] B - 40 fVP
[5] EP - 50mm

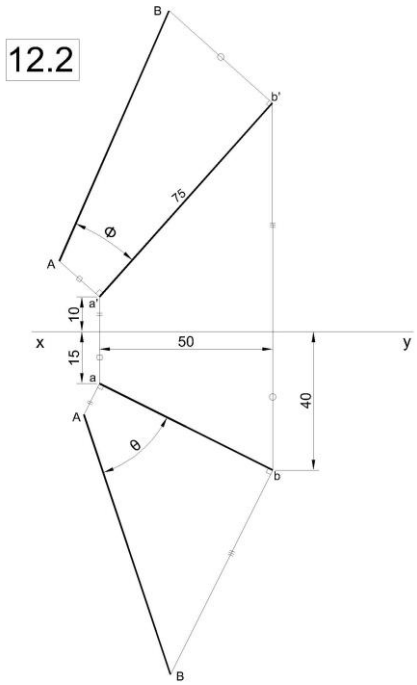
SCALE 1:1
ALL DIMENSIONS ARE IN mm

ANSWERS

[1] TL - 79mm
[2] ϕ - 18°
[3] θ - 45°

See YouTube Channel Graphicszone2021 for videos

12.2



GIVEN

[1] FV - 75mm
[2] A - 10 aHP
[3] A - 15 fVP
[4] B - 40 fVP
[5] EP - 50mm

ANSWERS

[1] TL - 79mm
[2] ϕ - 18°
[3] θ - 45°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q13

PROJECTION OF LINES

PLANE ROTATION –THIRD QUADRANT

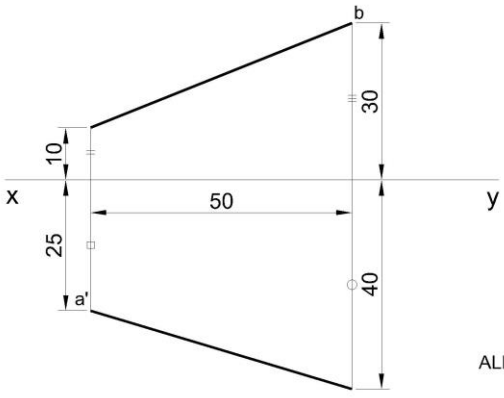
17 GIVEN: LOCATION OF TWO POINTS; DISTANCE BETWEEN END PROJECTORS

A line AB is inclined to both reference planes. Point A is 10mm behind VP and 25mm below HP. Point B is 30mm behind VP and 40mm below HP. The distance between A and B along XY is 50mm. Determine the true length and true inclinations of the line with reference planes and also find its traces.

SUMESH 8848440142

[1] EP – 50mm , [2] B – 30 bVP , [3] B – 40 bHP , [4] A – 25 bHP [5] A -10 bVP,

13.1



GIVEN

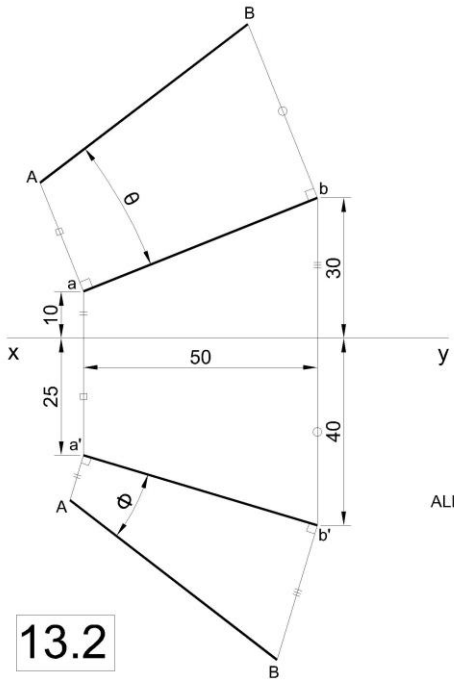
[1]	A	- 25 bHP
[2]	A	- 10 bVP
[3]	B	- 40 bHP
[4]	B	- 30 bVP
[5]	EP	- 50mm

ANSWERS

[1]	TL	- 56mm
[2]	ϕ	- 21°
[3]	θ	- 16°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	A	- 25 bHP
[2]	A	- 10 bVP
[3]	B	- 40 bHP
[4]	B	- 30 bVP
[5]	EP	- 50mm

ANSWERS

[1]	TL	- 56mm
[2]	ϕ	- 21°
[3]	θ	- 16°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q14

PROJECTION OF LINES

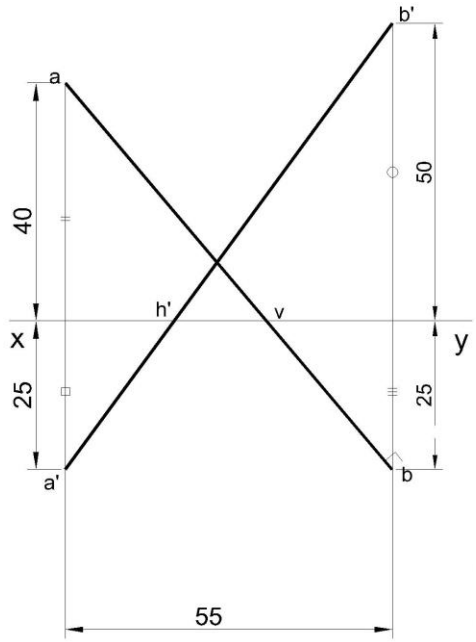
PLANE ROTATION –FIRST AND THIRD QUADRANT

18 **GIVEN: LOCATION OF TWO POINTS; DISTANCE BETWEEN END PROJECTORS**

The end A of the line AB is 25mm below HP and 40mm behind VP while the other end B is 50mm above HP and 25mm in front of VP. If the distance between the end projectors is 55mm, draw projections of the line AB. Determine the true length of the line, the inclinations of the line with HP and VP and also find its traces.

SUMESH 8848440142

[1] EP – 55mm , [2] B – 50 aHP , [3] B – 25 fVP , [4] A – 25 bHP [5] A -40 bVP,



GIVEN

[1] A - 25 bHP
[2] A - 40 bVP
[3] B - 50 aHP
[4] B - 25 fVP
[5] EP - 55mm

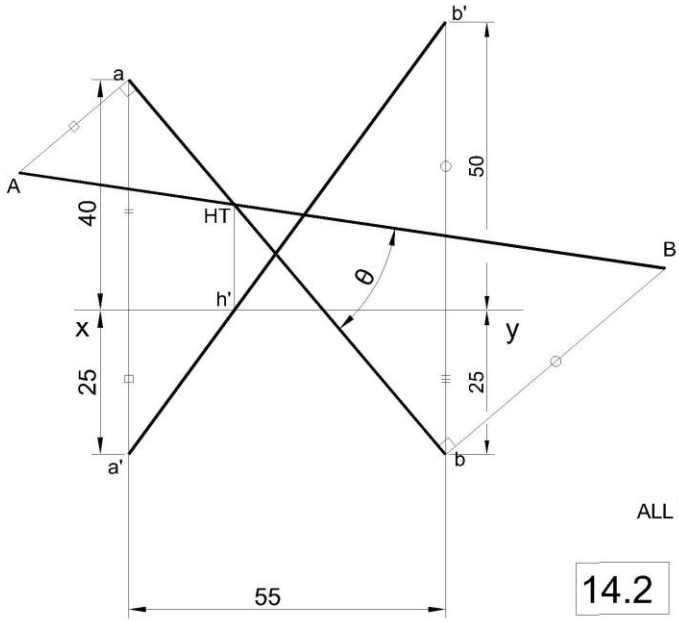
ANSWERS

[1] TL - 113mm
[2] ϕ - 35°
[3] θ - 41°
[4] h'-HT - 18mm
[5] v-VT - 21mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

14.1

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] A - 25 bHP
[2] A - 40 bVP
[3] B - 50 aHP
[4] B - 25 fVP
[5] EP - 55mm

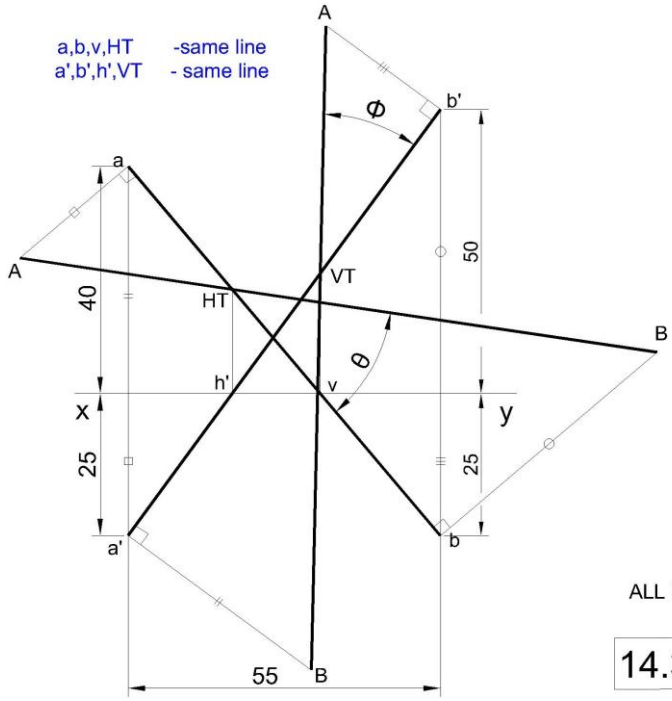
ANSWERS

[1] TL - 113mm
[2] ϕ - 35°
[3] θ - 41°
[4] h'-HT - 18mm
[5] v-VT - 21mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

14.2

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] A - 25 bHP
[2] A - 40 bVP
[3] B - 50 aHP
[4] B - 25 fVP
[5] EP - 55mm

ANSWERS

[1] TL - 113mm
[2] ϕ - 35°
[3] θ - 41°
[4] h'-HT - 18mm
[5] v-VT - 21mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

14.3

See YouTube Channel Graphicszone2021 for videos

Q207

PROJECTION OF LINES

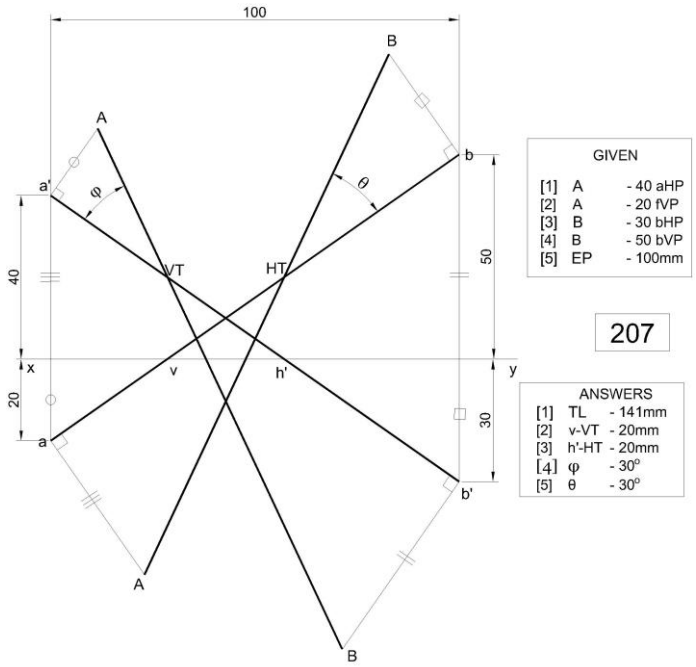
PLANE ROTATION METHOD

19 GIVEN: DISTANCE BETWEEN THE END PROJECTORS AND POSITION OF TWO POINTS

The point A of a line is 40mm above HP and 20mm in front of VP. The point B is 30mm below HP and 50mm behind VP. The distance between end projectors is 100 mm. Find the true length of the line and its inclination with HP and VP.

SUMESH 8848440142

[1] A -40 aHP , [2] A -20 fVP, [3] B- 50 bVP , [4] B –30 bHP, [5] EP – 100mm



See YouTube Channel Graphicszone2021 for videos

Q15

PROJECTION OF LINES

LINES TOUCHING THE REFERANCE PLANES -FIRST QUADRANT

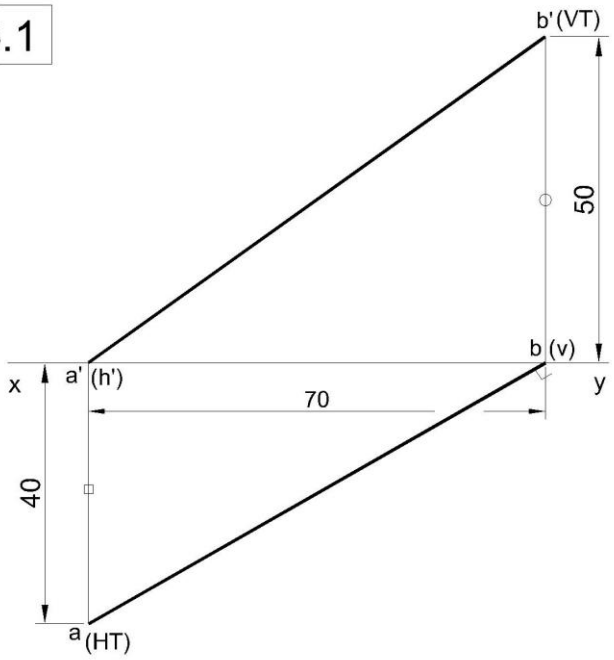
20 GIVEN: LOCATION OF TWO POINTS; DISTANCE BETWEEN END PROJECTORS

A line AB has its end A in HP and 40mm in front of VP and Point B is in VP and 50mm above HP. The distance between the end projectors is 70 mm. Draw its projections. Find the true length of the line and its inclinations with HP and VP. Also find its traces.

SUMESH 8848440142

[1] EP – 70mm , [2] B – 50 aHP , [3] B – in VP , [4] A – in HP [5] A -40 fVP,

15.1



GIVEN

[1] A - on HP
[2] A - 40 fVP
[3] B - 50 aHP
[4] B - on VP
[5] EP - 70mm

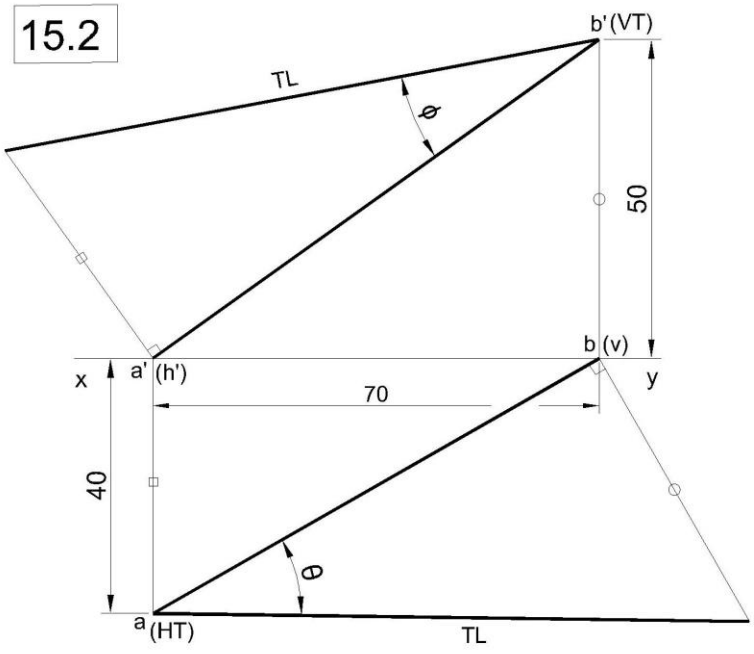
ANSWERS

[1] TL - 95mm
[2] ϕ - 25°
[3] θ - 31°
[4] h'-HT - 40mm
[5] v-VT - 50mm
[6] a'b' - 86mm
[7] ab - 81mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

15.2



GIVEN

[1] A - on HP
[2] A - 40 fVP
[3] B - 50 aHP
[4] B - on VP
[5] EP - 70mm

ANSWERS

[1] TL - 95mm
[2] ϕ - 25°
[3] θ - 31°
[4] h'-HT - 40mm
[5] v-VT - 50mm
[6] a'b' - 86mm
[7] ab - 81mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q16

PROJECTION OF LINES

LINES TOUCHING THE REFERANCE PLANES -THIRD QUADRANT

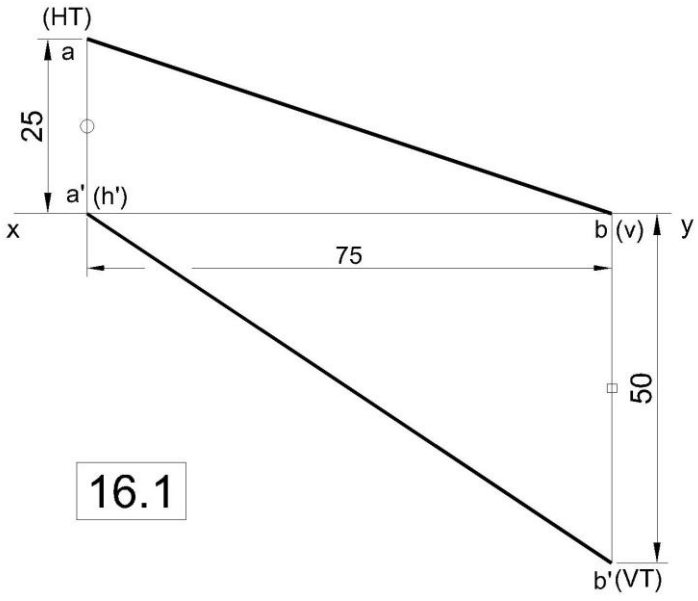
21

GIVEN: LOCATION OF TWO POINTS; DISTANCE BETWEEN END PROJECTORS

The end A of the line AB is in HP and 25mm behind VP. The end B is in VP and 50mm below HP. The distance between the end projectors is 75mm. Draw the projections of AB and determine its true length, traces and inclinations with HP and VP.

SUMESH 8848440142

[1] EP – 75mm , [2] B – 50 bHP , [3] B – in VP , [4] A – in HP [5] A -25 bVP,

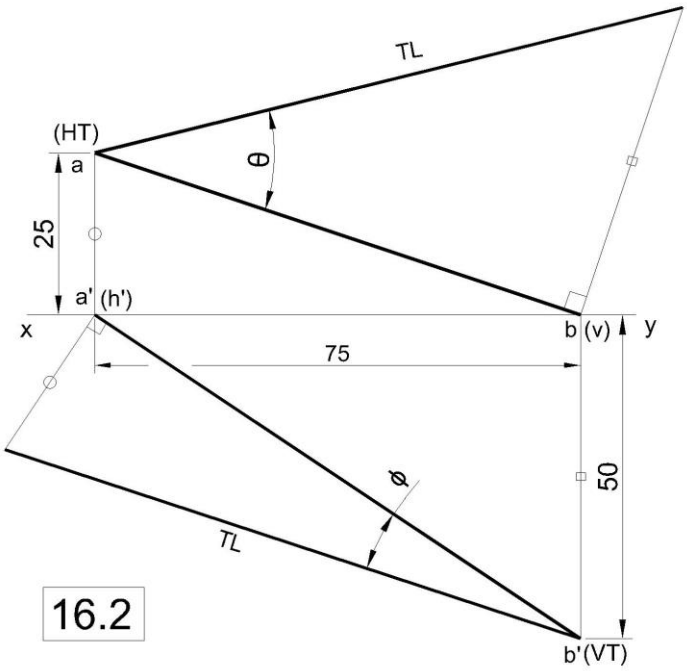


GIVEN		
[1]	A	- on HP
[2]	A	- 25 bVP
[3]	B	- 50 bHP
[4]	B	- on VP
[5]	EP	- 75mm

ANSWERS		
[1]	TL	- 94mm
[2]	ϕ	- 16°
[3]	θ	- 32°
[4]	h'-HT	- 25mm
[5]	v-VT	- 50mm
[6]	a'b'	- 90mm
[7]	ab	- 79mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	A	- on HP
[2]	A	- 25 bVP
[3]	B	- 50 bHP
[4]	B	- on VP
[5]	EP	- 75mm

ANSWERS

[1]	TL	- 94mm
[2]	ϕ	- 16°
[3]	θ	- 32°
[4]	h'-HT	- 25mm
[5]	v-VT	- 50mm
[6]	a'b'	- 90mm
[7]	ab	- 79mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q17

PROJECTION OF LINES

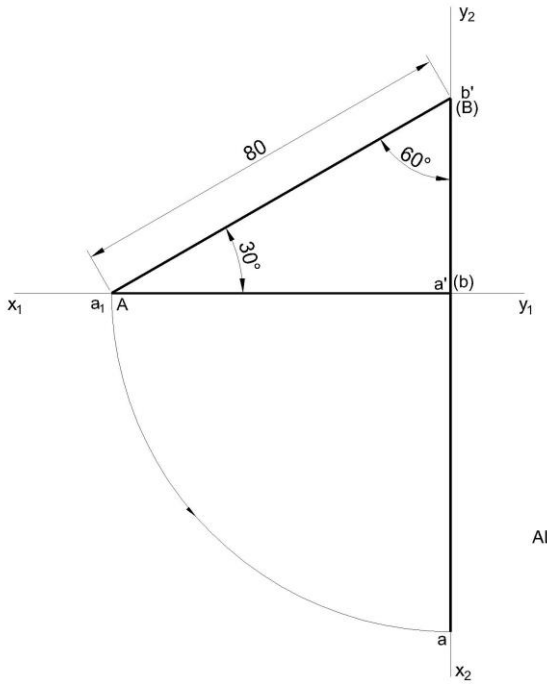
LADDER PROBLEM –LINES IN PROFILE PLANE

22 **GIVEN: POSITION OF THE TWO POINTS; COMPLEMENTARY ANGLES WITH REF. PLANES**

A straight line AB is 80mm long. The end A is in HP and the end B is in VP. The line AB is inclined at 30° to HP and 60° to VP. Draw the projections of the line.

SUMESH 8848440142

[1] AB – 80mm , [2] $\theta = 30^0$, [3] $\phi = 60^0$, [4] B – in VP , [5] A – in HP



GIVEN

[1] AB - 80mm
[2] A - in HP
[3] B - in VP
[4] θ - 30°
[5] ϕ - 60°

ANSWERS

[1] a'b' - 40mm
[2] ab - 69mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

17

See YouTube Channel Graphicszone2021 for videos

Q20

PROJECTION OF LINES

MID-POINT PROBLEM

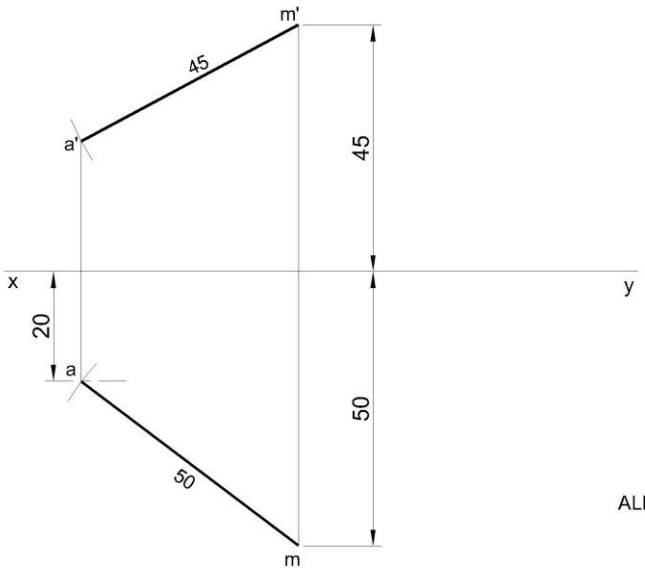
23

GIVEN: FRONT & TOP VIEWS; MID-POINT POSITION

A straight line AB has its end A, 20 mm in front of VP and nearer to it. The mid point M of the line is 50mm in front of VP and 45mm above HP. The front and top view measures 90mm and 100mm respectively. Draw the projections of the line. Find the true length of the line and its inclinations with HP and VP.

SUMESH 8848440142

[1] FV – 90mm , [2] TV – 100mm , [3] M – 50 fVP , [4] M – 45 aHP [5] A -20 fVP,



GIVEN

[1]	A	- 20 fVP
[2]	M	- 50 fVP
[3]	M	- 45 aHP
[4]	FV	- 90mm
[5]	TV	- 100mm

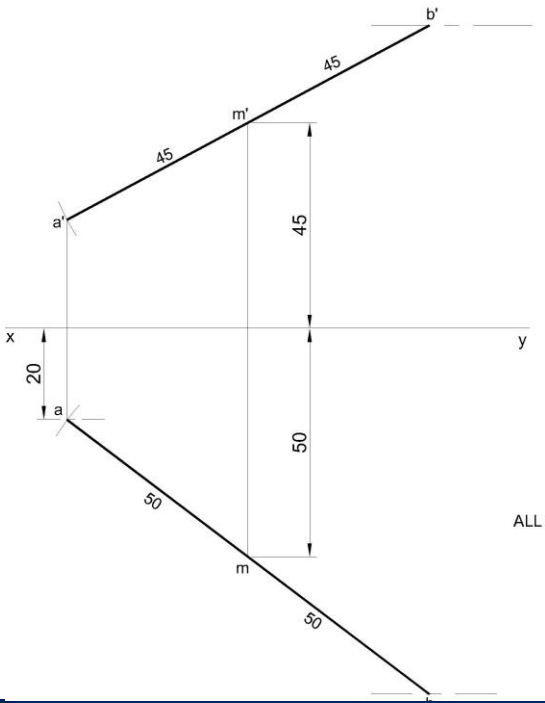
ANSWERS

[1]	AB	- 108mm
[2]	θ	- 23°
[3]	ϕ	- 34°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

20.1

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	A	- 20 fVP
[2]	M	- 50 fVP
[3]	M	- 45 aHP
[4]	FV	- 90mm
[5]	TV	- 100mm

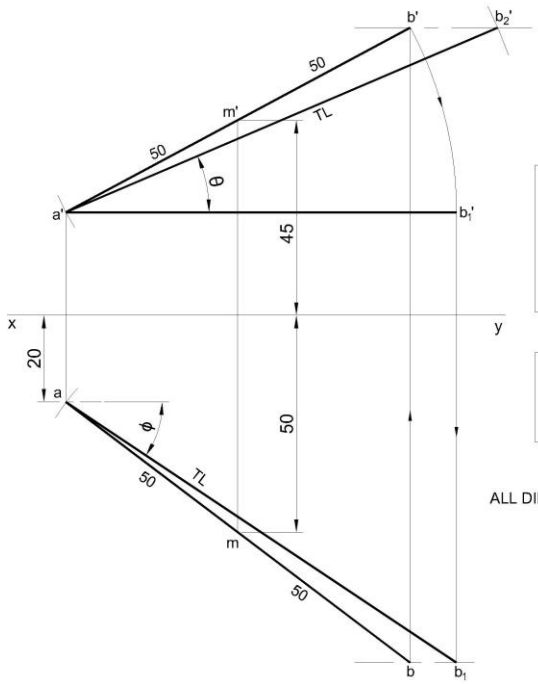
ANSWERS

[1]	AB	- 108mm
[2]	θ	- 23°
[3]	ϕ	- 34°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

20.2

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	A	- 20 fVP
[2]	M	- 50 fVP
[3]	M	- 45 aHP
[4]	FV	- 90mm
[5]	TV	- 100mm

ANSWERS

[1]	AB	- 108mm
[2]	θ	- 23°
[3]	ϕ	- 34°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

20.3

See YouTube Channel Graphicszone2021 for videos

Q21

PROJECTION OF LINES

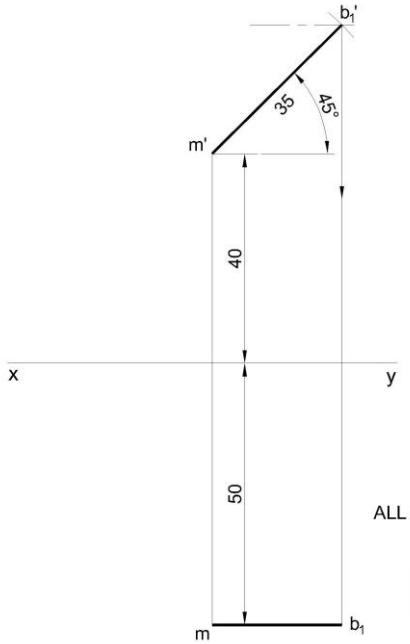
MID-POINT PROBLEM

24 **GIVEN: MID-POINT POSITION; TRUE LENGTH; TRUE INCLINATIONS**

The mid point of the line AB is 40mm above HP and 50mm in front of VP. The line measures 70mm and is inclined at 45° to HP and 30° to VP. Draw its projections.

SUMESH 8848440142

[1] AB – 70mm, [2] $\theta = 45^0$, [3] $\phi = 30^0$, [4] M – 50 fVP, [5] M – 40 aHP



GIVEN

[1] AB - 70mm
[2] θ - 45°
[3] φ - 30°
[4] M - 40 aHP
[5] M - 50 fVP

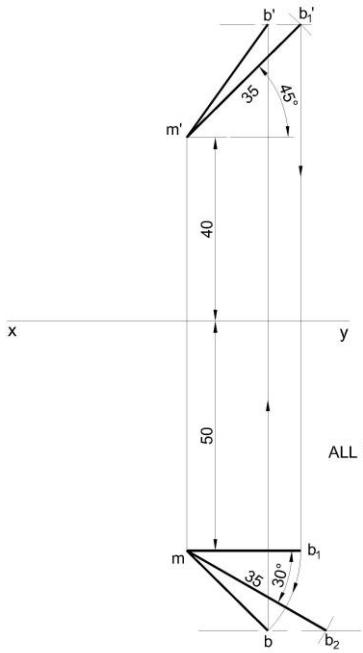
ANSWERS

[1] a'b' - 61mm
[2] ab - 50mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

21.1

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] AB - 70mm
[2] θ - 45°
[3] φ - 30°
[4] M - 40 aHP
[5] M - 50 fVP

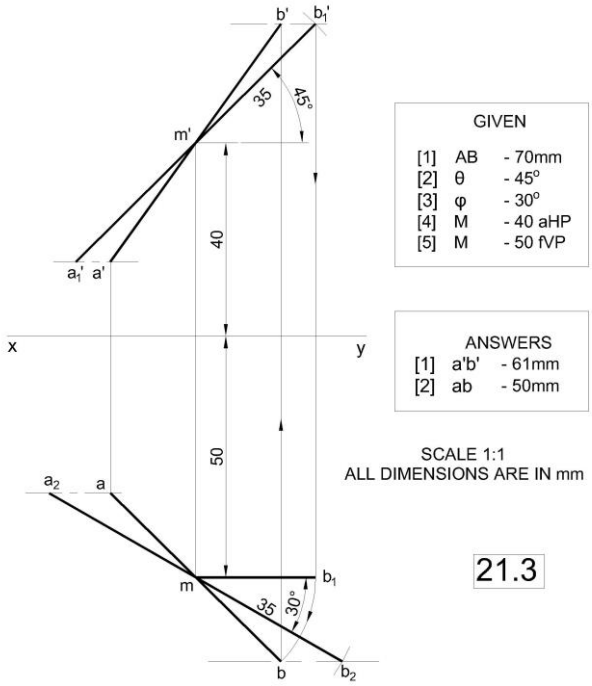
ANSWERS

[1] a'b' - 61mm
[2] ab - 50mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

21.2

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] AB - 70mm
[2] θ - 45°
[3] φ - 30°
[4] M - 40 aHP
[5] M - 50 fVP

ANSWERS

[1] a'b' - 61mm
[2] ab - 50mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

21.3

See YouTube Channel Graphicszone2021 for videos

Q26

PROJECTION OF LINES

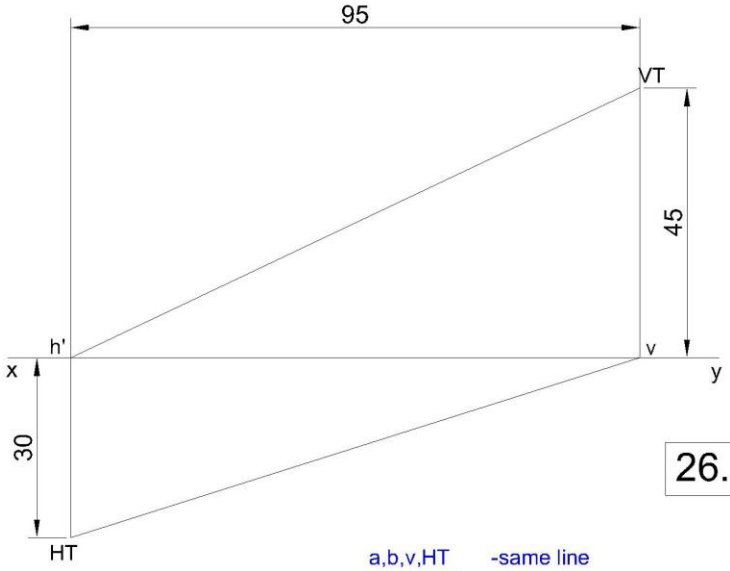
TRACE PROBLEM

25 GIVEN: DISTANCE BETWEEN TRACES & END PROJECTORS; POSITIONS OF TRACES

The distance between the projectors drawn through HT and VT are 95mm. The distance between the end projectors is 65mm. The HT is 30mm in front of VP and VT is 45mm above HP. The end A is 10mm above HP. Draw the projection and find the true length and true inclinations of the line.

SUMESH 8848440142

[1] EP – 65mm , [2] HT-VT – 95mm, [3] HT– 30 fVP, [4] A– 10 aHP , [5] VT – 45 aHP



GIVEN		
[1]	HT-VT	- 95mm
[2]	EP	- 65mm
[3]	HT	- 30 fVP
[4]	VT	- 45 aHP
[5]	A	- 10 aHP

ANSWERS		
[1]	θ	- 24°
[2]	φ	- 16°
[3]	TL	- 75mm
[4]	a'b'	- 72mm
[5]	ab	- 68mm

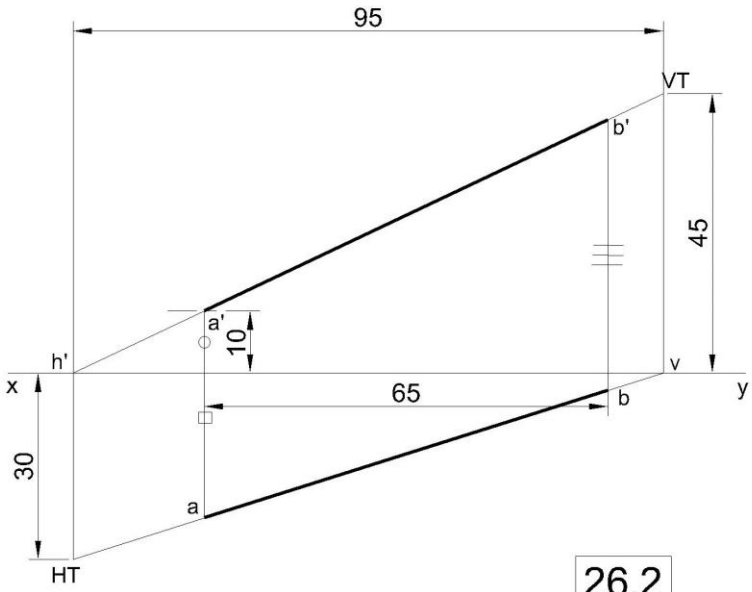
See YouTube Channel Graphicszone2021 for videos

26.1

a,b,v,HT -same line
a',b',h',VT - same line

ALL DIMENSIONS ARE IN mm

SCALE 1:1



GIVEN		
[1]	HT-VT	- 95mm
[2]	EP	- 65mm
[3]	HT	- 30 fVP
[4]	VT	- 45 aHP
[5]	A	- 10 aHP

ANSWERS		
[1]	θ	- 24°
[2]	φ	- 16°
[3]	TL	- 75mm
[4]	a'b'	- 72mm
[5]	ab	- 68mm

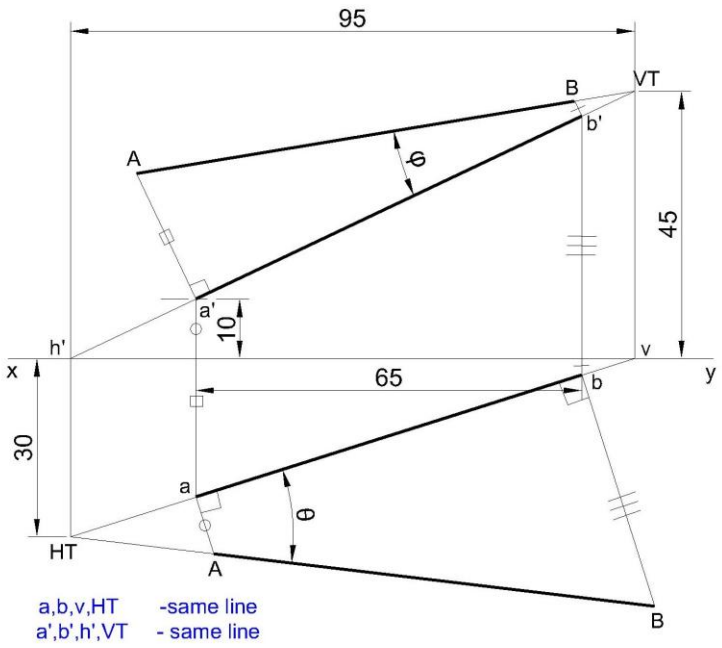
See YouTube Channel Graphicszone2021 for videos

26.2

a,b,v,HT -same line
a',b',h',VT - same line

ALL DIMENSIONS ARE IN mm

SCALE 1:1



26.3

GIVEN

[1] HT-VT - 95mm
[2] EP - 65mm
[3] HT - 30 fVP
[4] VT - 45 aHP
[5] A - 10 aHP

ANSWERS

[1] θ - 24°
[2] φ - 16°
[3] TL - 75mm
[4] a'b' - 72mm
[5] ab - 68mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos

Q27

PROJECTION OF LINES

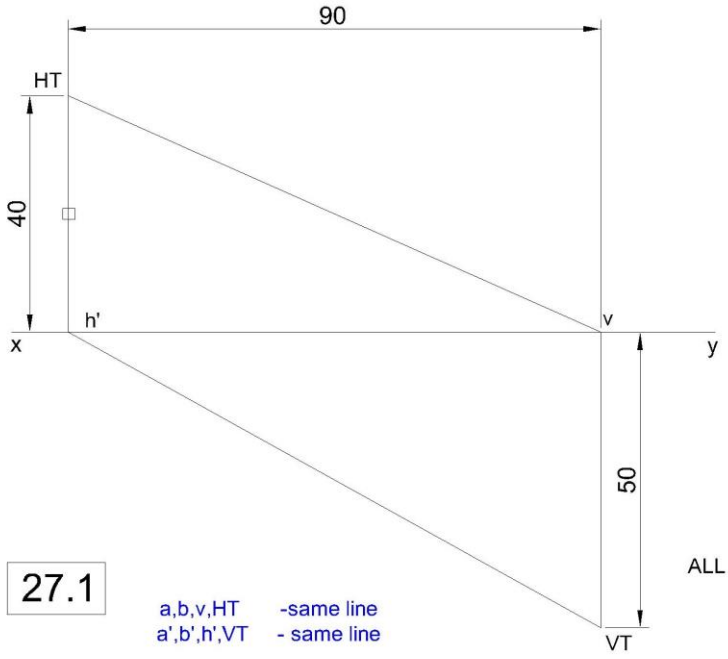
TRACE PROBLEM- ASSUMING THE MISSING DATA

26 GIVEN: DISTANCE BETWEEN TRACES & END PROJECTORS; POSITIONS OF TRACES

The projectors drawn through HT and VT of a straight line AB are 90mm apart and those drawn through its end points are 60mm apart. The HT is 40mm behind VP and VT is 50mm below HP. Draw the projections of the line and determine its inclinations with VP and HP and also find the true length of the line.

SUMESH 8848440142

[1] EP – 60mm , [2] HT-VT – 90mm, [3] HT– 40 bVP, [4] A– in HP (Assume) , [5] VT – 50 bHP



27.1

a,b,v,HT -same line
a',b',h',VT - same line

GIVEN

[1] HT-VT - 90mm
[2] EP - 60mm
[3] HT - 40 bVP
[4] VT - 50 bHP
[5] A - in HP

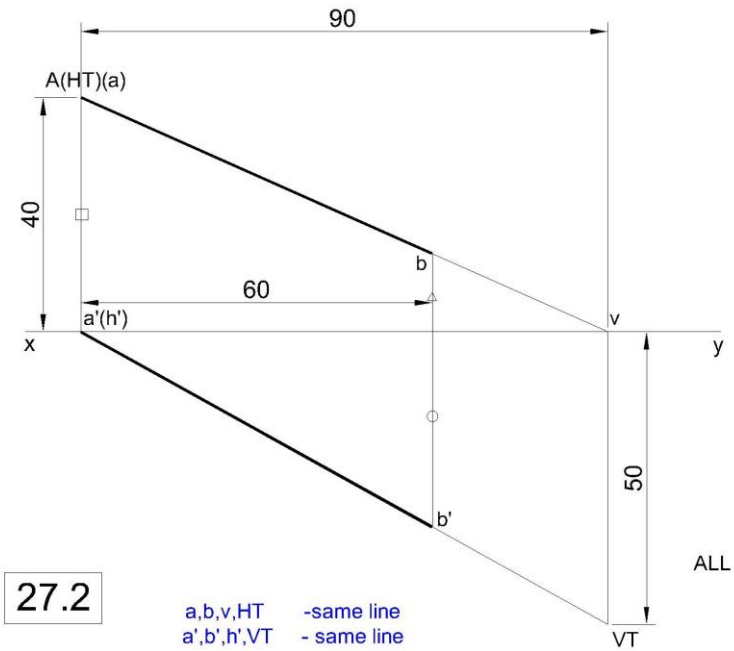
ANSWERS

[1] θ - 27°
[2] φ - 21°
[3] TL - 74mm
[4] a'b' - 69mm
[5] ab - 66mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos



27.2

a,b,v,HT -same line
a',b',h',VT - same line

GIVEN

[1] HT-VT - 90mm
[2] EP - 60mm
[3] HT - 40 bVP
[4] VT - 50 bHP
[5] A - in HP

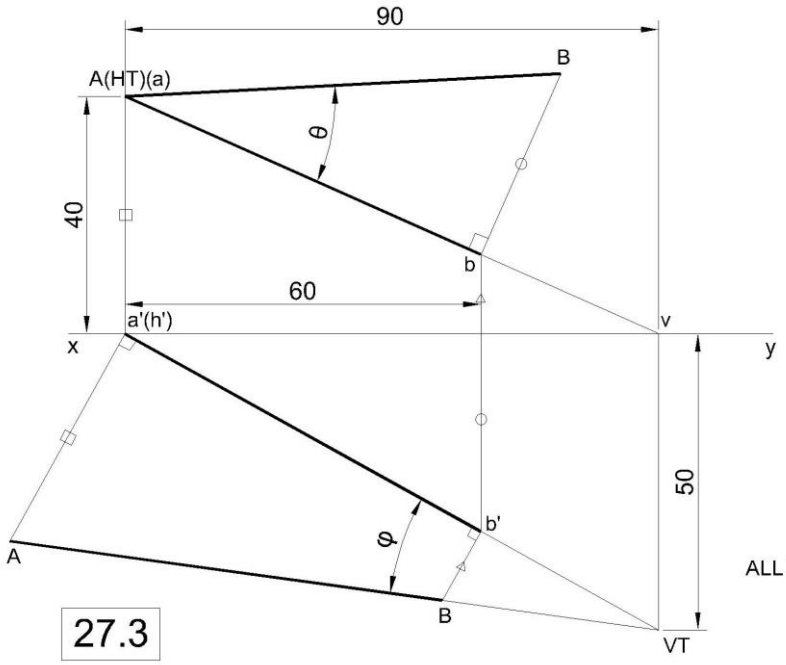
ANSWERS

[1] θ - 27°
[2] φ - 21°
[3] TL - 74mm
[4] a'b' - 69mm
[5] ab - 66mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos



a,b,v,HT -same line
a',b',h',VT - same line

GIVEN

[1] HT-VT - 90mm
[2] EP - 60mm
[3] HT - 40 bVP
[4] VT - 50 bHP
[5] A - in HP

ANSWERS

[1] θ - 27°
[2] φ - 21°
[3] TL - 74mm
[4] a'b' - 69mm
[5] ab - 66mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos

Q29

PROJECTION OF LINES

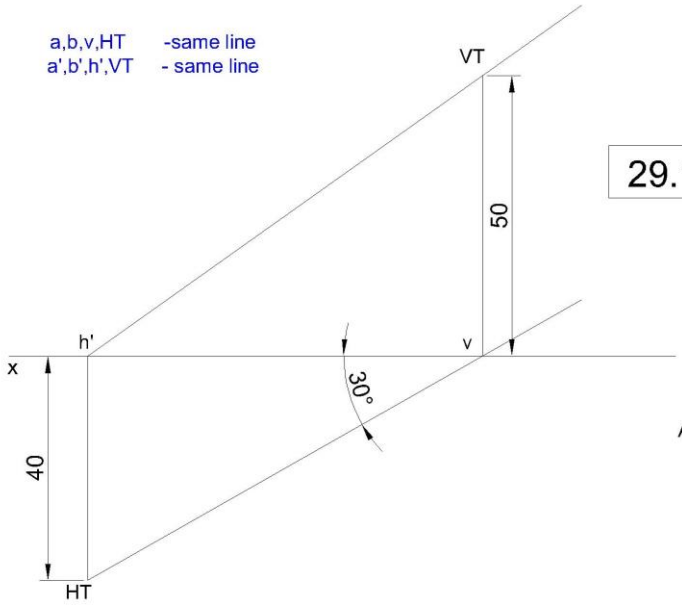
TRACE PROBLEM

27 GIVEN: APPARENT INCLINATION ; POSITIONS OF TRACES

The top view of the line AB is inclined 30° to xy line. The HT is 40mm in front of VP and VT is 50mm above HP. One end point B of the line is 10mm behind the VP. Draw the projection if the other point A is 20mm above HP. What is the true length of the line? And find the true inclinations.

SUMESH 8848440142

[1] $\beta = 30^0$, [2] A – 20aHP, [3] HT– 40 fVP, [4] B– 10 bVP , [5] VT – 50 aHP



29.1

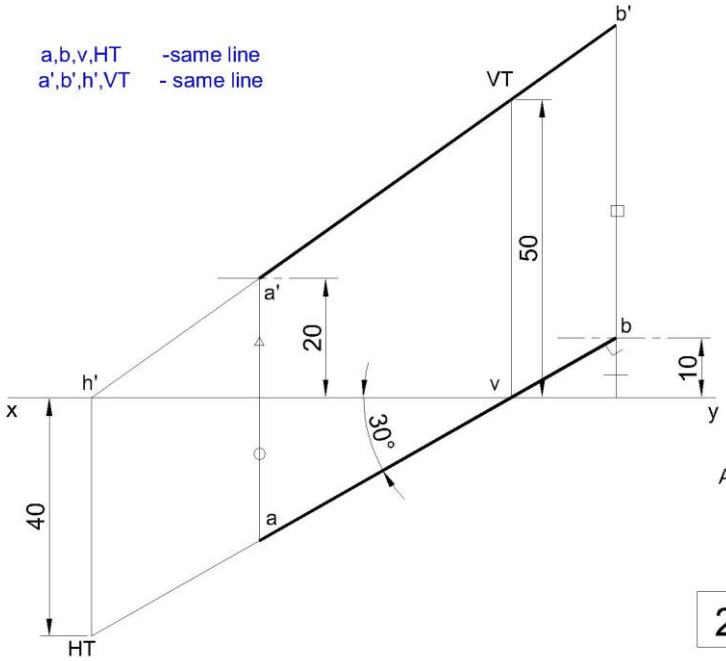
GIVEN		
[1]	β	- 30°
[2]	B	- 10 bVP
[3]	HT	- 40 fVP
[4]	VT	- 50 aHP
[5]	A	- 20 aHP

ANSWERS		
[1]	θ	- 32°
[2]	φ	- 25°
[3]	TL	- 81mm
[4]	a'b'	- 73mm
[5]	ab	- 69mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos



29.2

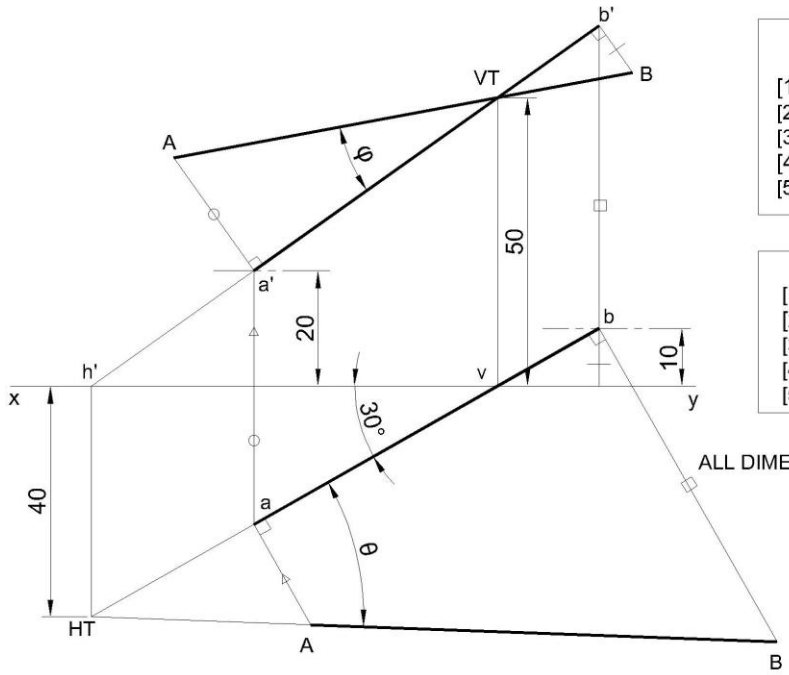
GIVEN		
[1]	β	- 30°
[2]	B	- 10 bVP
[3]	HT	- 40 fVP
[4]	VT	- 50 aHP
[5]	A	- 20 aHP

ANSWERS		
[1]	θ	- 32°
[2]	φ	- 25°
[3]	TL	- 81mm
[4]	a'b'	- 73mm
[5]	ab	- 69mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	β	- 30°
[2]	B	- 10 bVP
[3]	HT	- 40 fVP
[4]	VT	- 50 aHP
[5]	A	- 20 aHP

ANSWERS

[1]	θ	- 32°
[2]	φ	- 25°
[3]	TL	- 81mm
[4]	a'b'	- 73mm
[5]	ab	- 69mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

29.3

See YouTube Channel Graphicszone2021 for videos

Q31

PROJECTION OF LINES

TRACE PROBLEM

28 GIVEN: POSITION OF TRACES; APPARENT INCLINATION OF FRONT VIEW

The HT of the line is 30mm behind VP and VT of the line is 40mm above HP. The front view of the line makes an angle 30° with xy- line. One end of the line is 15mm below the HP, while the other end is 10mm in front of VP. Draw the projection of the line. Measure the length of front and top views.

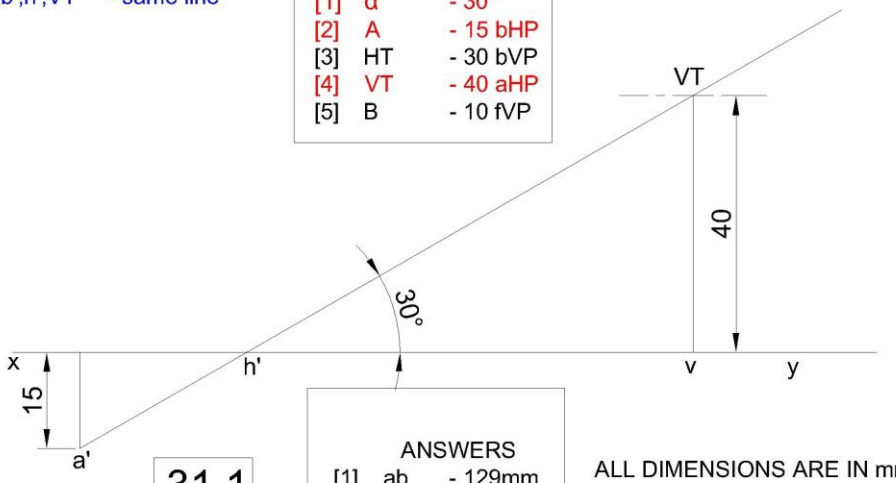
SUMESH 8848440142

[1] $\alpha = 30^0$, [2] A – 15 bHP, [3] HT– 30 bVP, [4] B– 10 fVP , [5] VT – 40 aHP

a,b,v,HT -same line
a',b',h',VT - same line

GIVEN

[1]	α	- 30°
[2]	A	- 15 bHP
[3]	HT	- 30 bVP
[4]	VT	- 40 aHP
[5]	B	- 10 fVP



31.1

ANSWERS

[1]	ab	- 129mm
[2]	a'b'	- 137mm

ALL DIMENSIONS ARE IN mm

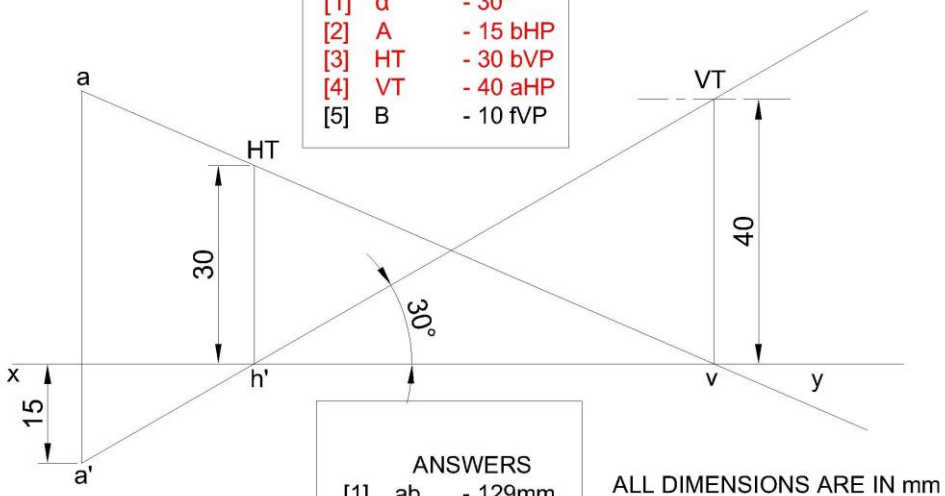
SCALE 1:1

See YouTube Channel Graphicszone2021 for videos

a,b,v,HT -same line
a',b',h',VT - same line

GIVEN

[1]	α	- 30°
[2]	A	- 15 bHP
[3]	HT	- 30 bVP
[4]	VT	- 40 aHP
[5]	B	- 10 fVP



31.2

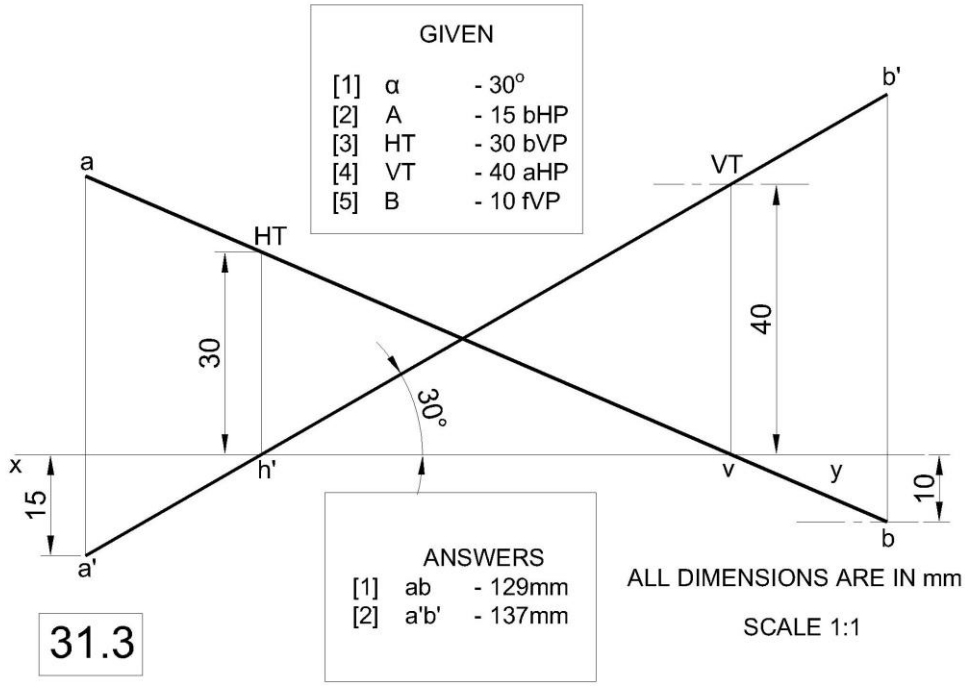
ANSWERS

[1]	ab	- 129mm
[2]	a'b'	- 137mm

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos



See YouTube Channel Graphicszone2021 for videos

Q218

PROJECTION OF LINES

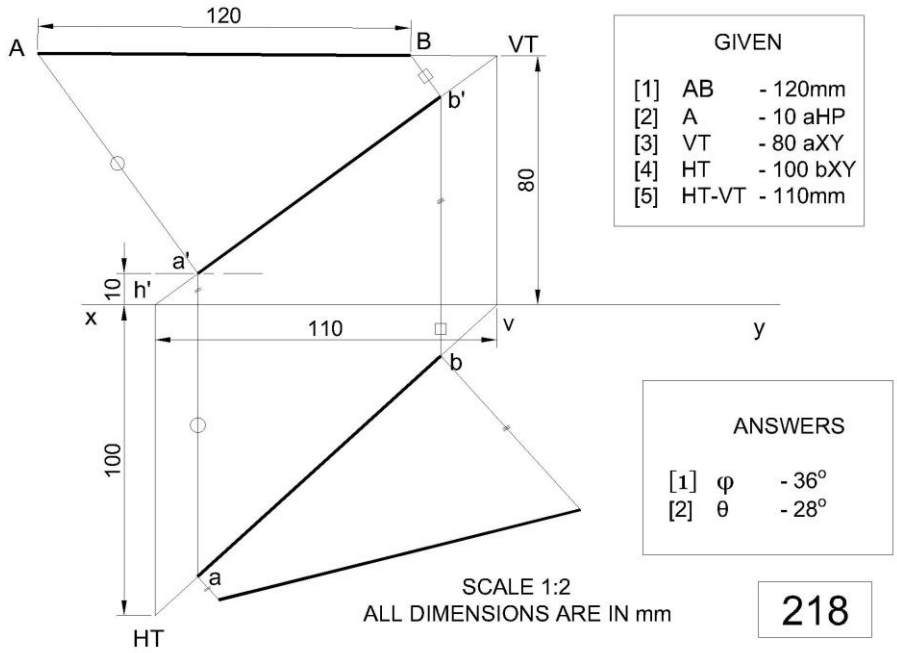
TRACE PROBLEM –PLANE ROTATION

29 GIVEN: TRUE LENGTH; HORIZONTAL & VERTICAL TRACES; DISTANCE BETWEEN TRACES

A straight line AB measuring 120mm long has its vertical trace 80mm above xy-line and the HT 100mm below xy-line. The projectors through HT and VT are 110mm apart. If the point A is 10mm above HP, draw the projections of AB and find its true inclinations with respect to HP and VP.

SUMESH 8848440142

[1] AB - 120mm , [2] VT- 80 aXY, [3] HT -100 bXY [4] HT-VT -110mm, [5] A – 10 aHP



GIVEN

[1] AB - 120mm
[2] A - 10 aHP
[3] VT - 80 aXY
[4] HT - 100 bXY
[5] HT-VT - 110mm

ANSWERS

[1] φ - 36°
[2] θ - 28°

218

See YouTube Channel Graphicszone2021 for videos

Q32

PROJECTION OF LINES

TRACE PROBLEM

30 GIVEN: DISTANCE BETWEEN END PROJECTORS; TRUE INCLINATION WITH HP; LOCATION OF HT

A line AB is in third quadrant. The ends A and B are 20mm and 60mm behind VP. The distance between the end projectors is 75mm. The line is inclined at 30° to HP and its horizontal trace is 10mm above xy-line. Draw the projections of the line AB, determine its true length and vertical trace.

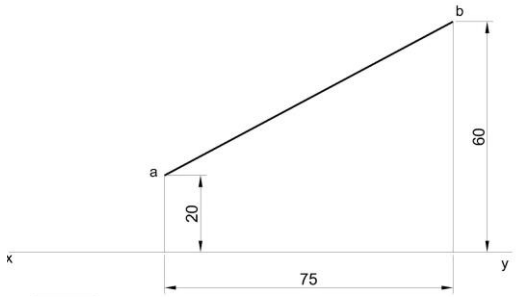
SUMESH 8848440142

[1] EP- 75mm, [2] $\theta = 30^0$, [3] A- 20 bVP, [4] B- 60 bVP , [5] HT – 10 aXY

a,b,v,HT -same line
a',b',h',VT - same line

GIVEN

[1] θ - 30°
[2] A - 20 bVP
[3] B - 60 bVP
[4] EP - 75mm
[5] HT - 10 aXY



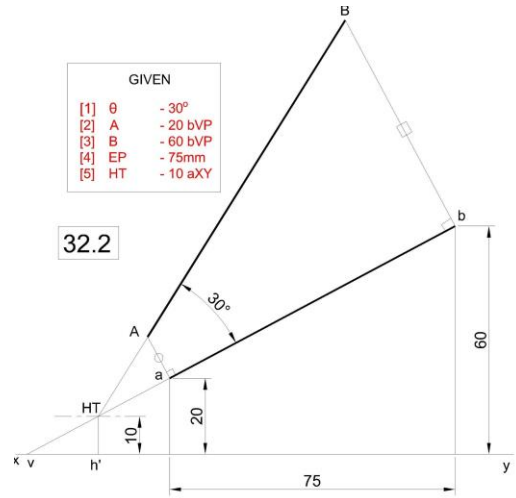
32.1

ANSWERS
[1] TL - 98mm
[2] v-VT - 12mm

SCALE 1:1

ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] θ - 30°
[2] A - 20 bVP
[3] B - 60 bVP
[4] EP - 75mm
[5] HT - 10 aXY

32.2

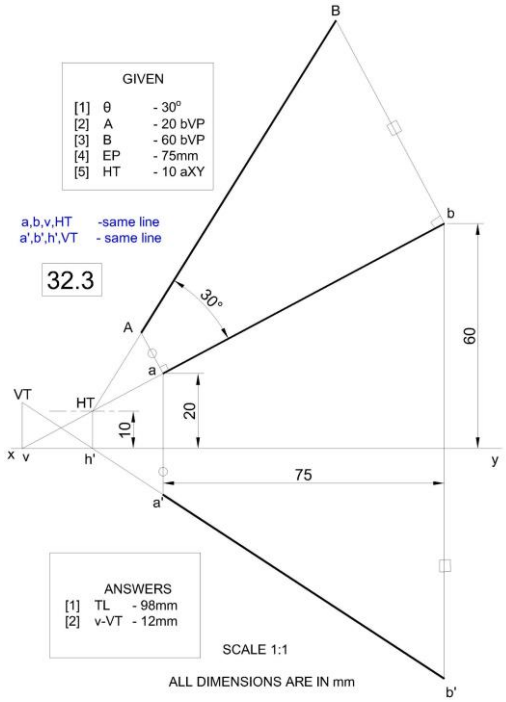
ANSWERS
[1] TL - 98mm
[2] v-VT - 12mm

SCALE 1:1

a,b,v,HT -same line
a',b',h',VT - same line

ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



Q33

PROJECTION OF LINES

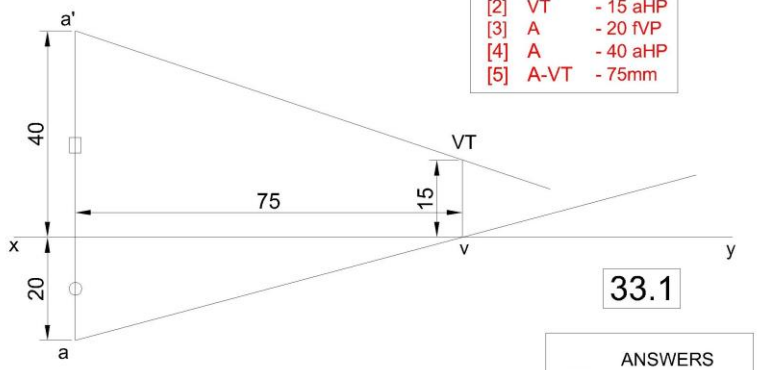
TRACE PROBLEM

31 GIVEN: TRUE LENGTH; POSITION OF ONE POINT; VERTICAL TRACE; DISTANCE A-VT

A line AB measuring 100mm has its VT 15mm above the HP. The projectors through A and VT are 75mm apart. If the end A is 40mm above the HP and 20mm in front of VP, draw the projections and find the true inclinations with the reference planes. Find the other trace.

SUMESH 8848440142

[1] AB- 100mm, [2] A –VT – 75mm, [3] A– 40 aHP, [4] A– 20 fVP , [5] VT – 15 aHP



GIVEN		
[1]	AB	- 100mm
[2]	VT	- 15 aHP
[3]	A	- 20 fVP
[4]	A	- 40 aHP
[5]	A-VT	- 75mm

33.1

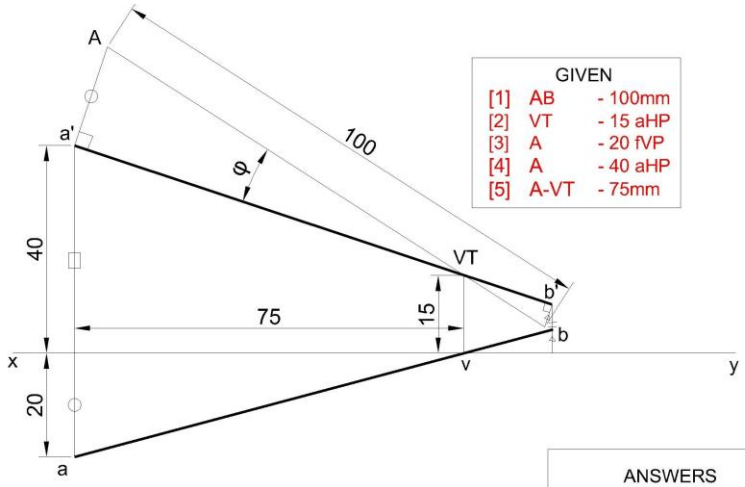
ANSWERS		
[1]	φ	- 14°
[2]	θ	- 18°
[3]	h'-HT	- 12 mm

See YouTube Channel Graphicszone2021 for videos

a,b,v,HT -same line
a',b',h',VT - same line

SCALE 1:1

ALL DIMENSIONS ARE IN mm



GIVEN		
[1]	AB	- 100mm
[2]	VT	- 15 aHP
[3]	A	- 20 fVP
[4]	A	- 40 aHP
[5]	A-VT	- 75mm

ANSWERS		
[1]	φ	- 14°
[2]	θ	- 18°
[3]	h'-HT	- 12 mm

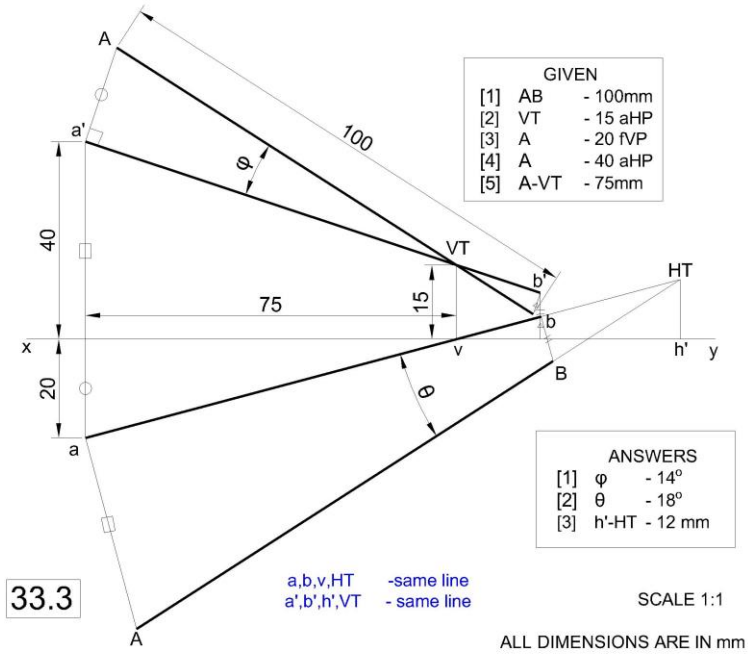
See YouTube Channel Graphicszone2021 for videos

a,b,v,HT -same line
a',b',h',VT - same line

33.2

SCALE 1:1

ALL DIMENSIONS ARE IN mm



See YouTube Channel Graphicszone2021 for videos

Q34

PROJECTION OF LINES

Q34 & Q35 ARE SAME – LINE ROTATION METHOD

32 **GIVEN: FRONT VIEW; TRUE INCLINATION WITH VP; APPARENT ANGLE WITH TOP VIEW; VT GIVEN**

The front view of a line AB measures 80mm and makes an angle of 45° with xy-line. The end A is in HP and VT of the line is 30mm above HP. Draw the projections of the line and its true length. The line is inclined at 30° to the VP. What is the distance of the point B from both HP and VP. Also measure the distance of HT from xy –line.

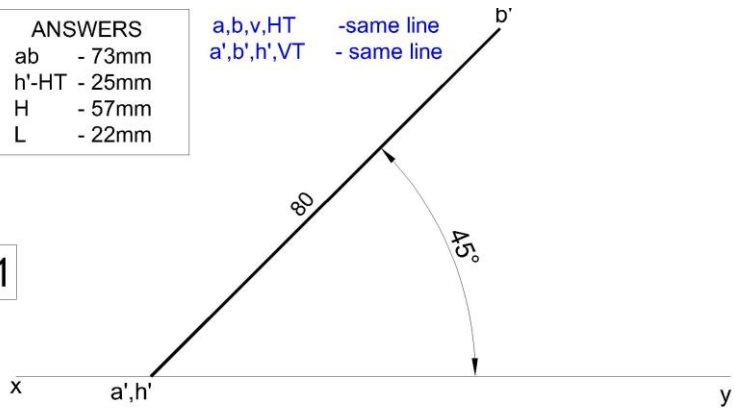
SUMESH 8848440142

[1] FV- 80mm, [2] $\alpha = 45^0$, [3] A– in HP, [4] $\emptyset = 30^0$, [5] VT – 30 aHP

ANSWERS		
[1]	ab	- 73mm
[2]	h'-HT	- 25mm
[3]	H	- 57mm
[4]	L	- 22mm

a,b,v,HT -same line
a',b',h',VT - same line

34.1



GIVEN		
[1]	A	- on HP
[2]	VT	- 30 aHP
[3]	FV	- 80mm
[4]	φ	- 30°
[5]	α	- 45°

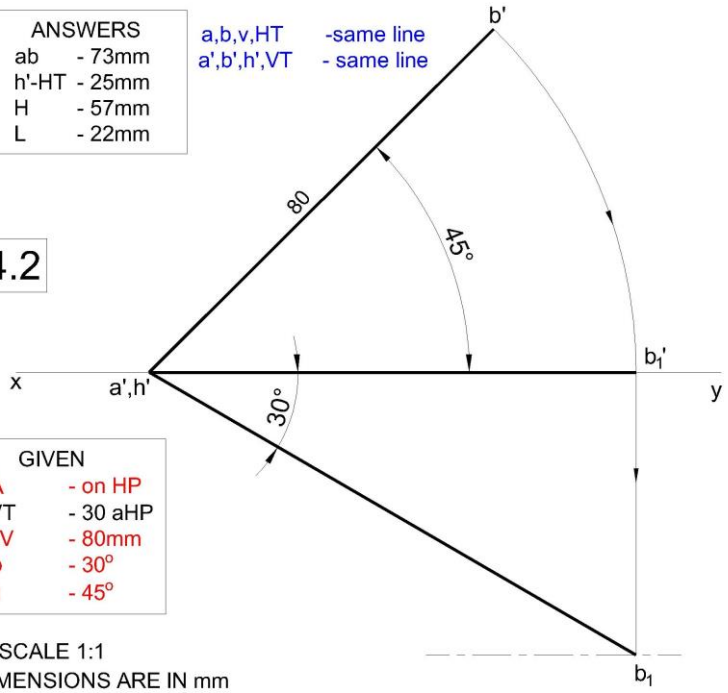
SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

ANSWERS		
[1]	ab	- 73mm
[2]	h'-HT	- 25mm
[3]	H	- 57mm
[4]	L	- 22mm

a,b,v,HT -same line
a',b',h',VT - same line

34.2



GIVEN		
[1]	A	- on HP
[2]	VT	- 30 aHP
[3]	FV	- 80mm
[4]	φ	- 30°
[5]	α	- 45°

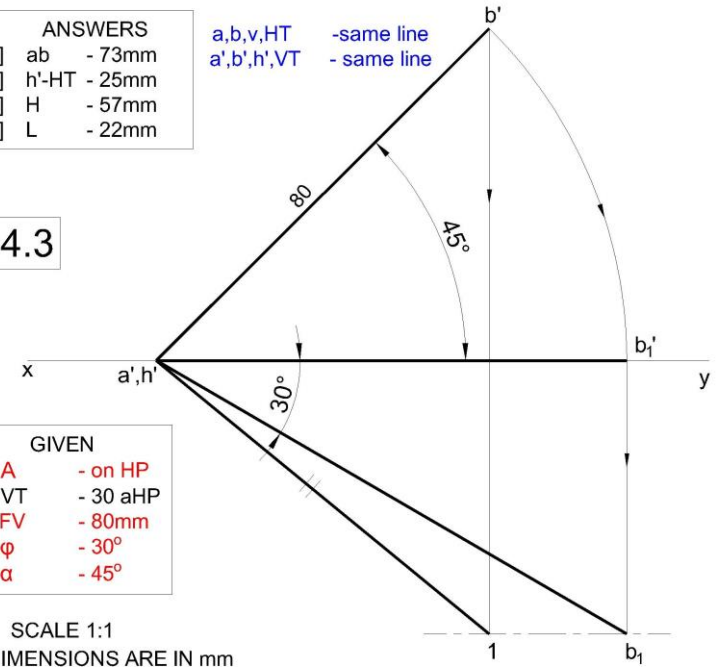
SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

ANSWERS		
[1]	ab	- 73mm
[2]	h'-HT	- 25mm
[3]	H	- 57mm
[4]	L	- 22mm

a,b,v,HT -same line
a',b',h',VT - same line

34.3



GIVEN		
[1]	A	- on HP
[2]	VT	- 30 aHP
[3]	FV	- 80mm
[4]	φ	- 30°
[5]	α	- 45°

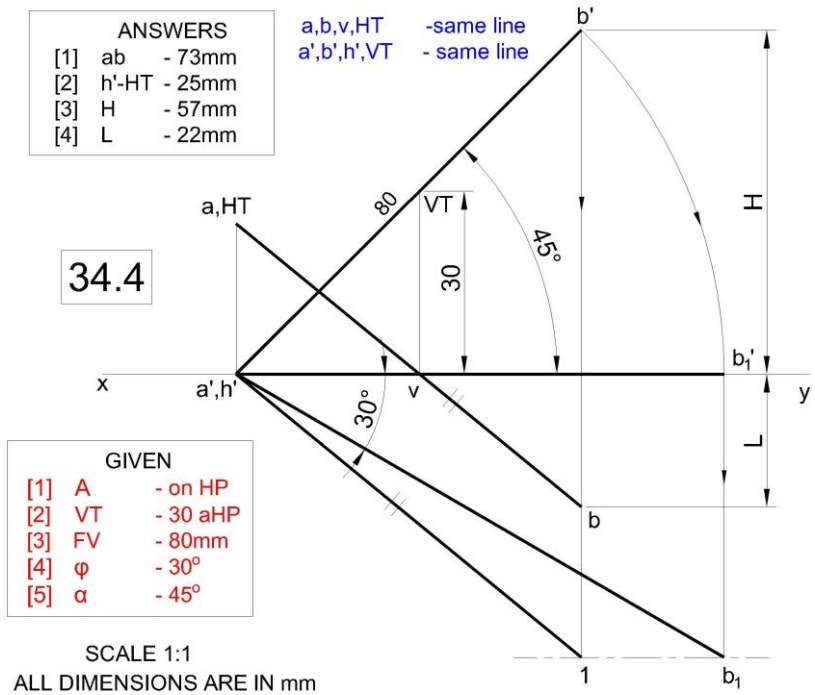
SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

ANSWERS		
[1]	ab	- 73mm
[2]	h'-HT	- 25mm
[3]	H	- 57mm
[4]	L	- 22mm

a,b,v,HT -same line
a',b',h',VT - same line

34.4



GIVEN		
[1]	A	- on HP
[2]	VT	- 30 aHP
[3]	FV	- 80mm
[4]	φ	- 30°
[5]	α	- 45°

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q35

PROJECTION OF LINES

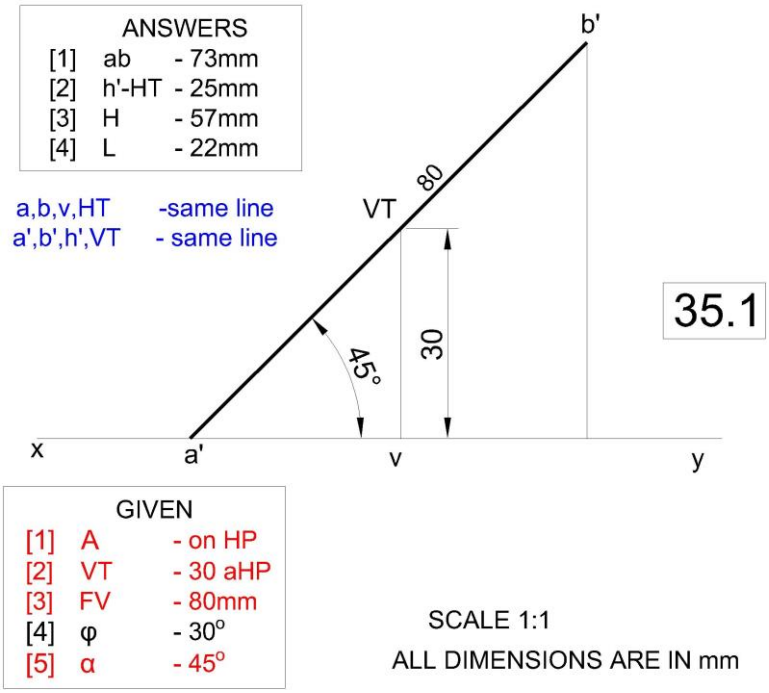
Q34 & Q35 ARE SAME – PLANE ROTATION METHOD

33 GIVEN: FRONT VIEW; TRUE INCLINATION WITH VP; APPARENT ANGLE WITH TOP VIEW; VT GIVEN

The front view of a line AB measures 80mm and makes an angle of 45° with xy-line. The end A is in HP and VT of the line is 30mm above HP. Draw the projections of the line and its true length. The line is inclined at 30° to the VP. What is the distance of the point B from both HP and VP. Also measure the distance of HT from xy –line.

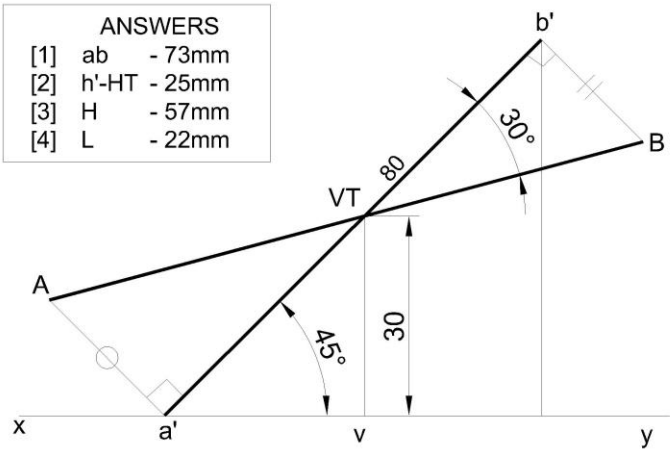
SUMESH 8848440142

[1] FV- 80mm, [2] $\alpha = 45^0$, [3] A– in HP, [4] $\emptyset = 30^0$, [5] VT – 30 aHP



See YouTube Channel Graphicszone2021 for videos

ANSWERS		
[1]	ab	- 73mm
[2]	h'-HT	- 25mm
[3]	H	- 57mm
[4]	L	- 22mm



GIVEN		
[1]	A	- on HP
[2]	VT	- 30 aHP
[3]	FV	- 80mm
[4]	φ	- 30°
[5]	α	- 45°

a,b,v,HT -same line
a',b',h',VT - same line

35.2

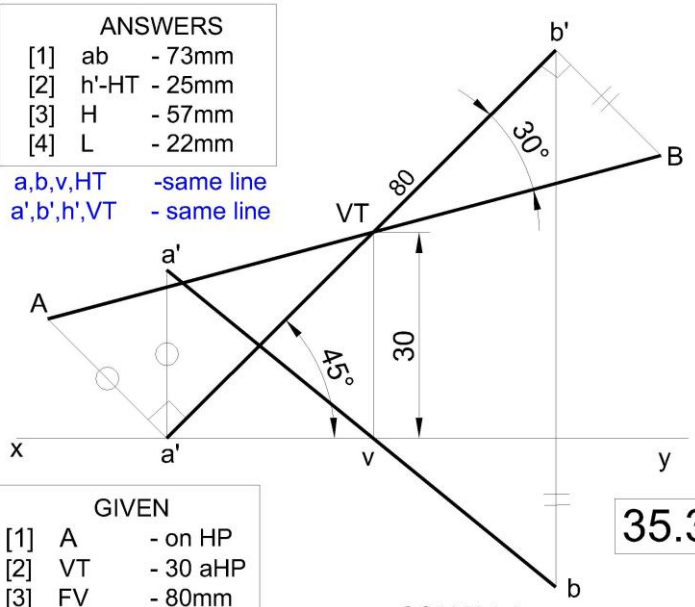
SCALE 1:1

ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

ANSWERS		
[1]	ab	- 73mm
[2]	h'-HT	- 25mm
[3]	H	- 57mm
[4]	L	- 22mm

a,b,v,HT -same line
a',b',h',VT - same line



GIVEN		
[1]	A	- on HP
[2]	VT	- 30 aHP
[3]	FV	- 80mm
[4]	φ	- 30°
[5]	α	- 45°

35.3

SCALE 1:1

ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

Q36

PROJECTION OF LINES

TRACE PROBLEM

34

GIVEN: FRONT VIEW; TRUE INCLINATION WITH HP; HT GIVEN

The line AB has its ends 10mm and 45mm above HP and length of elevation is 60mm. The line is inclined 30° to HP. The HT of the line is 15mm in front of VP. Draw its projections and find its true length and true inclination with VP. Locate vertical trace.

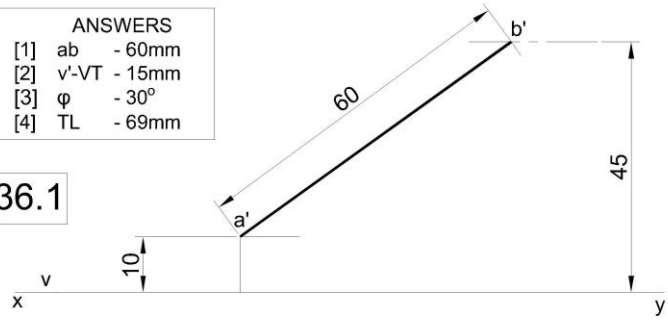
SUMESH 8848440142

[1] FV- 60mm, [2] $\theta = 30^0$, [3] A- 10 aHP, [4] B- 45 aHP , [5] HT – 15 fVP

ANSWERS

[1]	ab	- 60mm
[2]	v'-VT	- 15mm
[3]	φ	- 30°
[4]	TL	- 69mm

36.1



GIVEN

[1]	A	- 10 aHP
[2]	B	- 45 aHP
[3]	FV	- 60mm
[4]	θ	- 30°
[5]	HT	- 15 fVP

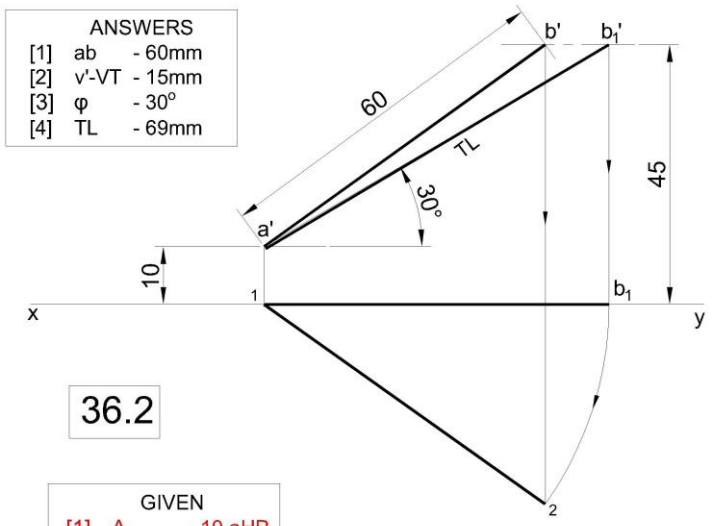
SCALE 1:1

ALL DIMENSIONS ARE IN mm

a,b,v,HT -same line

a',b',h',VT - same line

See YouTube Channel Graphicszone2021 for videos



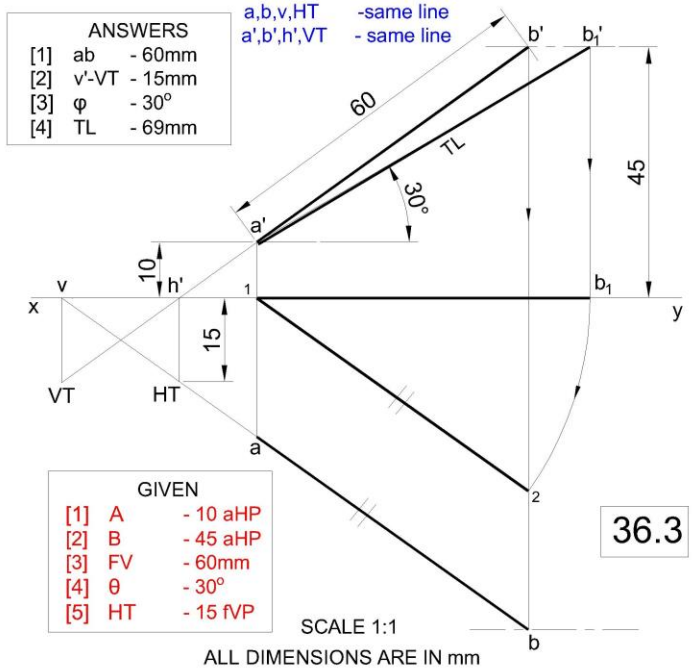
36.2

GIVEN
[1] A - 10 aHP
[2] B - 45 aHP
[3] FV - 60mm
[4] θ - 30°
[5] HT - 15 fVP

SCALE 1:1

ALL DIMENSIONS ARE IN mm

a,b,v,HT -same line
a',b',h',VT - same line

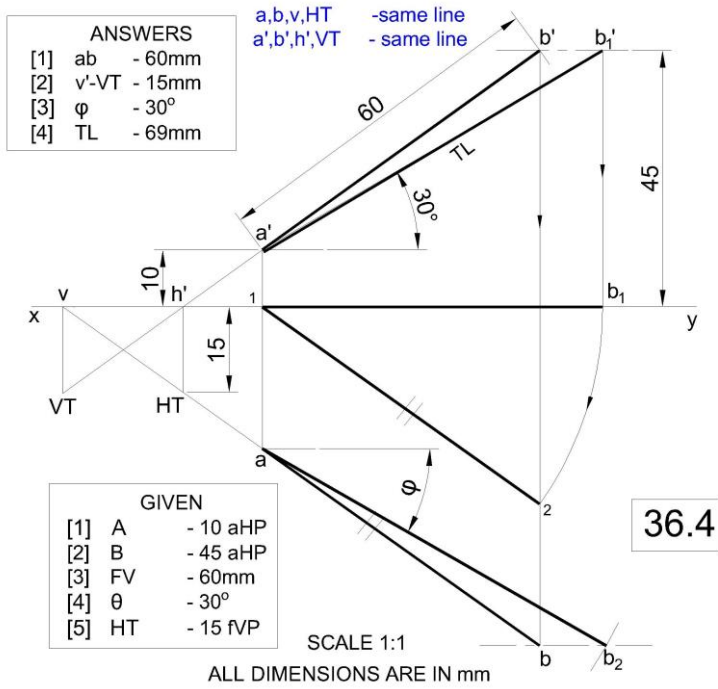


GIVEN
[1] A - 10 aHP
[2] B - 45 aHP
[3] FV - 60mm
[4] θ - 30°
[5] HT - 15 fVP

36.3

SCALE 1:1

ALL DIMENSIONS ARE IN mm



See YouTube Channel Graphicszone2021 for videos

Q203

PROJECTION OF LINES

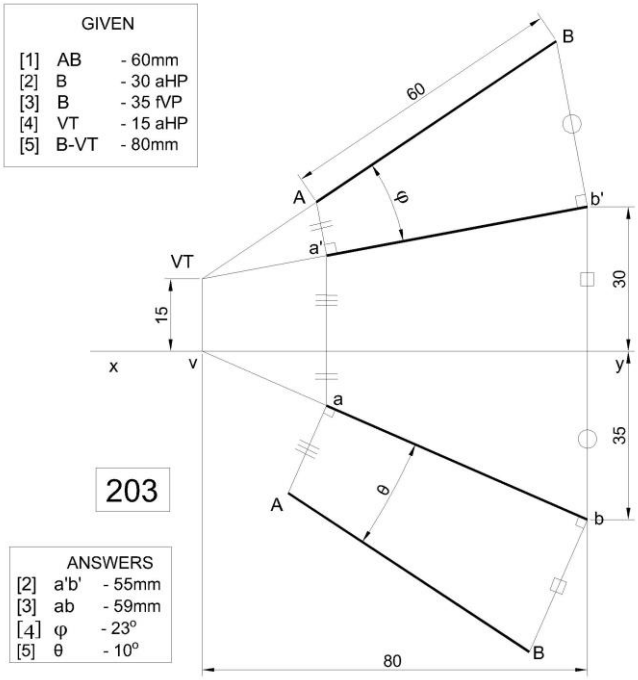
GIVEN THE POINT B, TRUE LENTH VERTICAL TRACE

35 GIVEN: TRUE LENGTH; POSITION OF POINT B; VERTICAL TRACE; B-VT DISTANCE

A line AB measuring 60mm long has its VT 15above HP. The end B is 30mm above HP and 35mm in front of VP. The projectors through B and VT are 80mm apart. Draw the projection and find the inclination with HP and VP.

SUMESH 8848440142

[1] B -35 fVP , [2] B -30 aHP, [3] AB-60mm , [4] VT –15 aHP, [5] B-VT-80



Q40

PROJECTION OF LINES

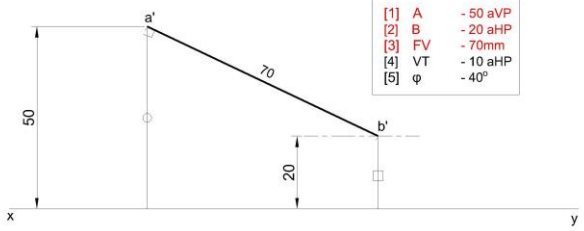
TRACE PROBLEM

36 **GIVEN: FRONT VIEW; LOCUS OF FRONT VIEW; TRUE INCLINATION WITH VP & VT**

The ends of the line AB are 50mm and 20mm above the HP. The length of its front view is 70mm and its vertical trace is 10mm above HP. The line is inclined 40° to VP. Find its true length and true inclinations with HP. Also locate its horizontal trace.

SUMESH 8848440142

[1] FV – 70mm [2] A– 50 aHP, [3] VT– 10 aHP, [3] B– 20 aHP, [5] $\emptyset = 40^0$



GIVEN

[1]	A	- 50 aVP
[2]	B	- 20 aHP
[3]	FV	- 70mm
[4]	VT	- 10 aHP
[5]	φ	- 40°

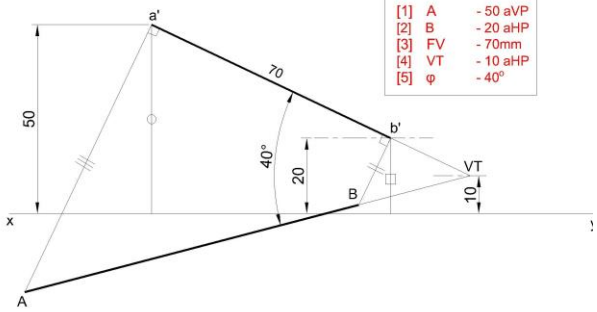
40.1

ANSWERS

[1]	ab	- 86mm
[2]	TL	- 91mm
[3]	h'-HT	- 20mm
[4]	θ	- 19°

a,b,v,HT -same line
a',b',h',VT - same line

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	A	- 50 aVP
[2]	B	- 20 aHP
[3]	FV	- 70mm
[4]	VT	- 10 aHP
[5]	φ	- 40°

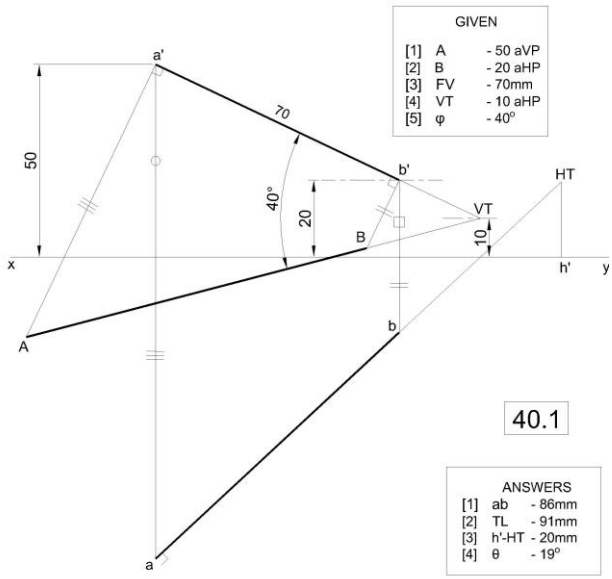
40.1

ANSWERS

[1]	ab	- 86mm
[2]	TL	- 91mm
[3]	h'-HT	- 20mm
[4]	θ	- 19°

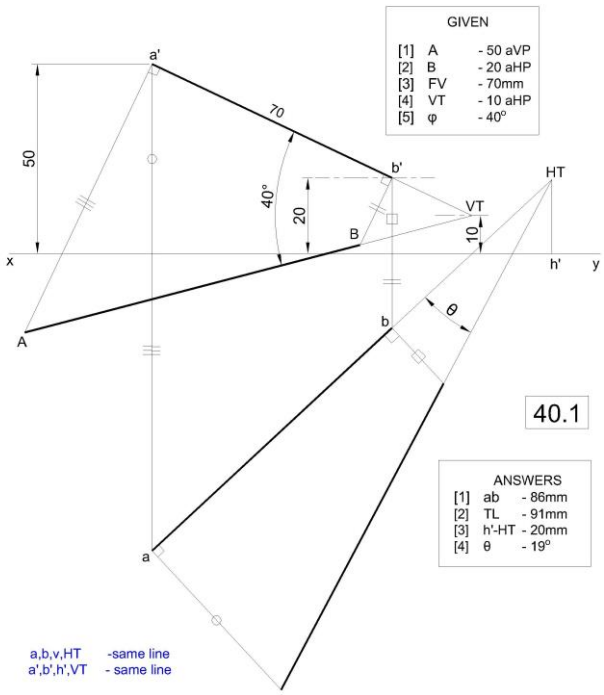
a,b,v,HT -same line
a',b',h',VT - same line

See YouTube Channel Graphicszone2021 for videos



a,b,v,HT -same line
a',b',h',VT - same line

See YouTube Channel Graphicszone2021 for videos



a,b,v,HT -same line
a',b',h',VT - same line

See YouTube Channel Graphicszone2021 for videos

Q196

PROJECTION OF LINES

TRACE PROBLEM

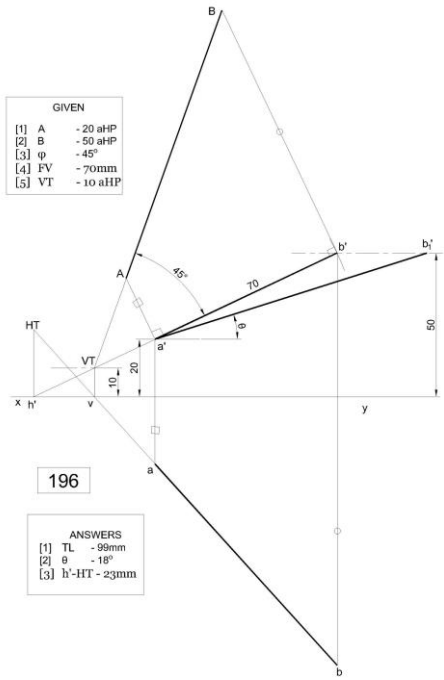
37

FRONT VIEW AND VERTICAL TRACE IS GIVEN

The ends of the line AB are 20mm and 50mm above the HP. The length of its front view is 70mm and its vertical trace is 10mm above HP. The line is inclined 45º to VP. Find its true length and true inclinations with HP. Also locate its horizontal trace.

SUMESH 8848440142

[1] FV – 70mm [2] A– 20 aHP, [3] VT– 10 aHP, [3] B– 50 aHP, [5] $\emptyset = 45^0$



See YouTube Channel Graphicszone2021 for videos

Q209

PROJECTION OF LINES

TRACE PROBLEM

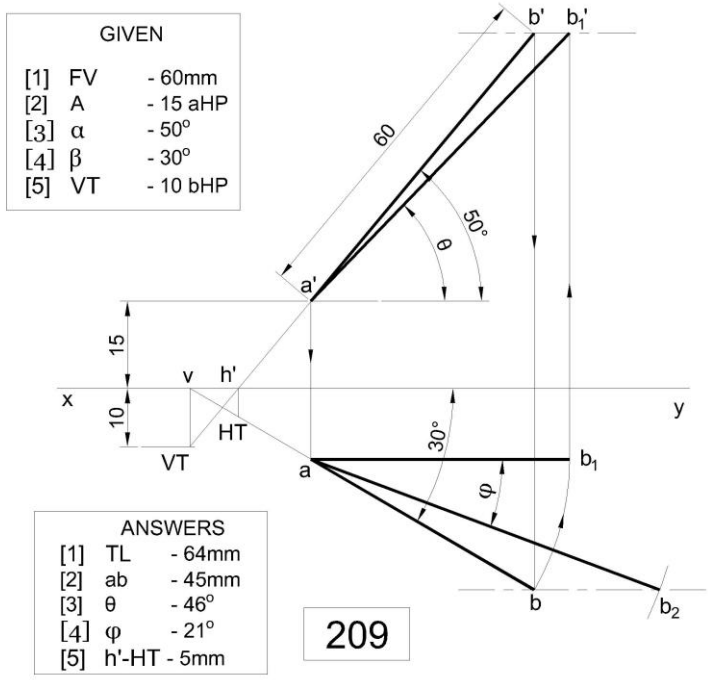
38

GIVEN: FRONT VIEW; APPARENT INCLINATIONS & VERTICAL TRACE

Front view of a line AB makes 50° with xy-line measures 60mm and its top view makes 30° with xy-line. End A is 15mm above HP and its VT is 10mm below HP. Draw the projections of the line AB, determine the inclinations with HP and VP, true length and locate the traces

SUMESH 8848440142

[1] A - 15 aHP , [2] α - 50°, [3] β -30° [4] FV– 40 mm, [5] VT – 10 bHP



See YouTube Channel Graphicszone2021 for videos

Q25

PROJECTION OF LINES

BRAIN STORMING

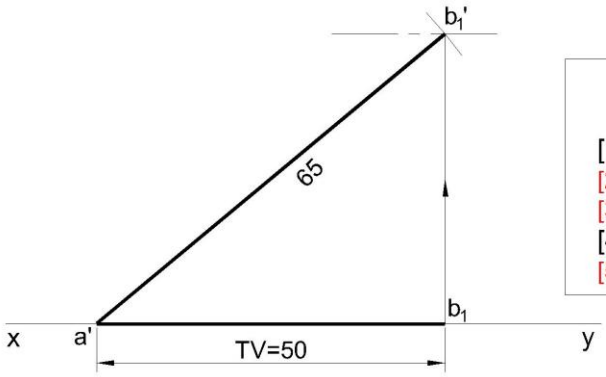
39

GIVEN: BOTH VIEWS; TRUE LENGTH; ONE CONDITION FOR END POINTS

A line AB is 65mm long. Its lower end is in HP while its upper end is in VP. If the front view and top view are 60mm and 50mm respectively. Draw the projection and measure its true inclinations with the reference planes.

SUMESH 8848440142

[1] AB – 65mm , [2] FV – 60mm, [3] TV – 50mm, [4] A– in HP , [5] B – in VP



GIVEN

[1] FV - 60mm
[2] TV - 50mm
[3] TL - 65mm
[4] B - in VP
[5] A - in HP

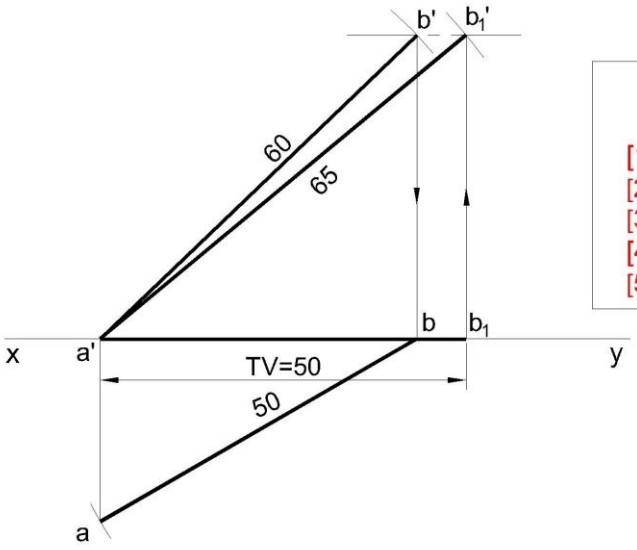
ANSWERS

[1] θ - 40°
[2] φ - 23°

See YouTube Channel Graphicszone2021 for videos

25.1

SCALE 1:1
ALL DIMENSIONS ARE IN mm



GIVEN

[1] FV - 60mm
[2] TV - 50mm
[3] TL - 65mm
[4] B - in VP
[5] A - in HP

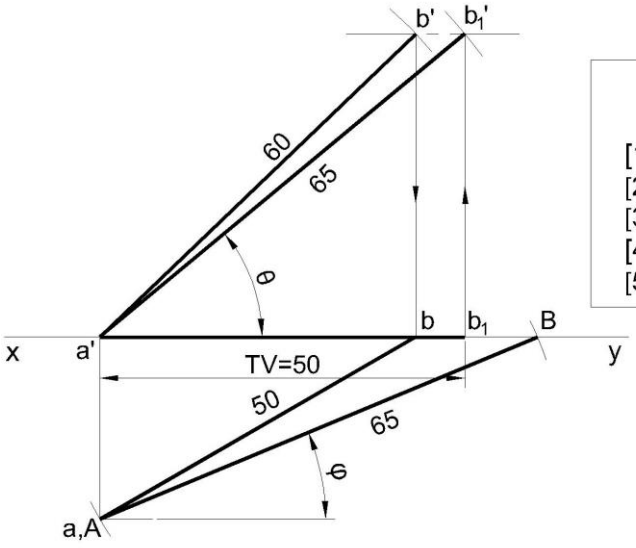
ANSWERS

[1] θ - 40°
[2] φ - 23°

See YouTube Channel Graphicszone2021 for videos

25.2

SCALE 1:1
ALL DIMENSIONS ARE IN mm



GIVEN

[1] FV - 60mm
[2] TV - 50mm
[3] TL - 65mm
[4] B - in VP
[5] A - in HP

ANSWERS

[1] θ - 40°
[2] φ - 23°

See YouTube Channel Graphicszone2021 for videos

25.3

SCALE 1:1
ALL DIMENSIONS ARE IN mm

Q28

PROJECTION OF LINES

TRACE PROBLEM – LINE ROTATION

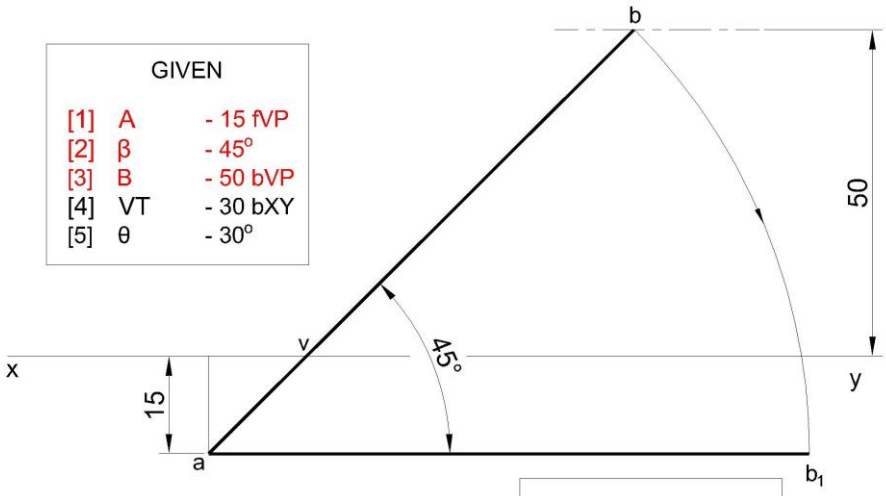
40

GIVEN: ONE DATA FOR TWO END POINTS; VERTICAL TRACE; β & θ

The straight line AB is inclined 30º to the HP while its top view is inclined 45º to xy- line. The end A is 15mm in front of the VP and is below the HP. The end B is 50mm behind the VP and is above the HP. The VT is 30mm below the xy-line. Draw the projection of the line and locate the HT.

SUMESH 8848440142

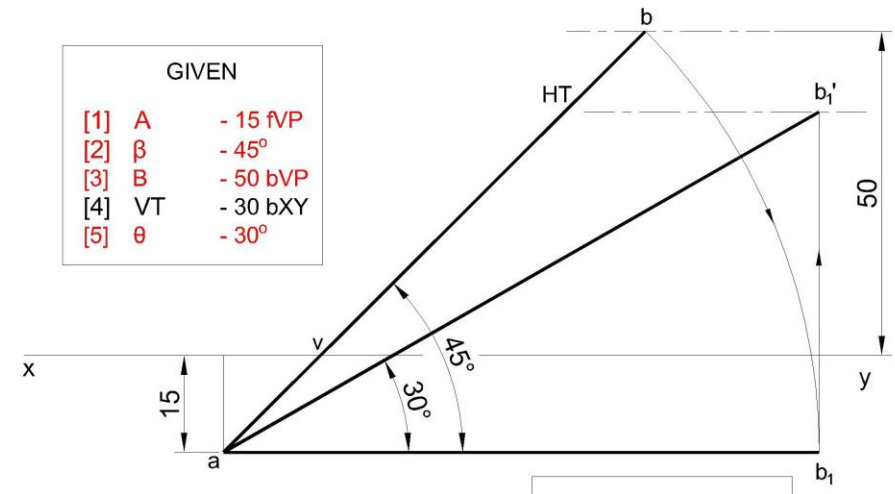
[1] $\theta = 30^0$, [2] $\beta = 45^0$, [3] A -15 fVP, [4] B – 50 bVP, [4] VT – 30 bXY



28.1

ANSWERS
[1] a'b' - 84mm
[2] ab - 92mm
[3] TL - 106mm
[4] h'-HT - 37mm

See YouTube Channel Graphicszone2021 for videos

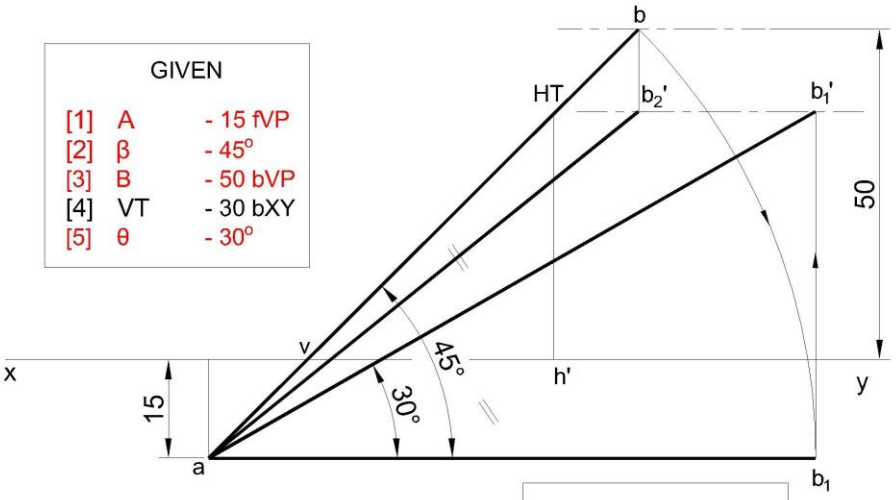


ANSWERS
[1] a'b' - 84mm
[2] ab - 92mm
[3] TL - 106mm
[4] h'-HT - 37mm

28.2

a,b,v,HT -same line
a',b',h',VT - same line

See YouTube Channel Graphicszone2021 for videos

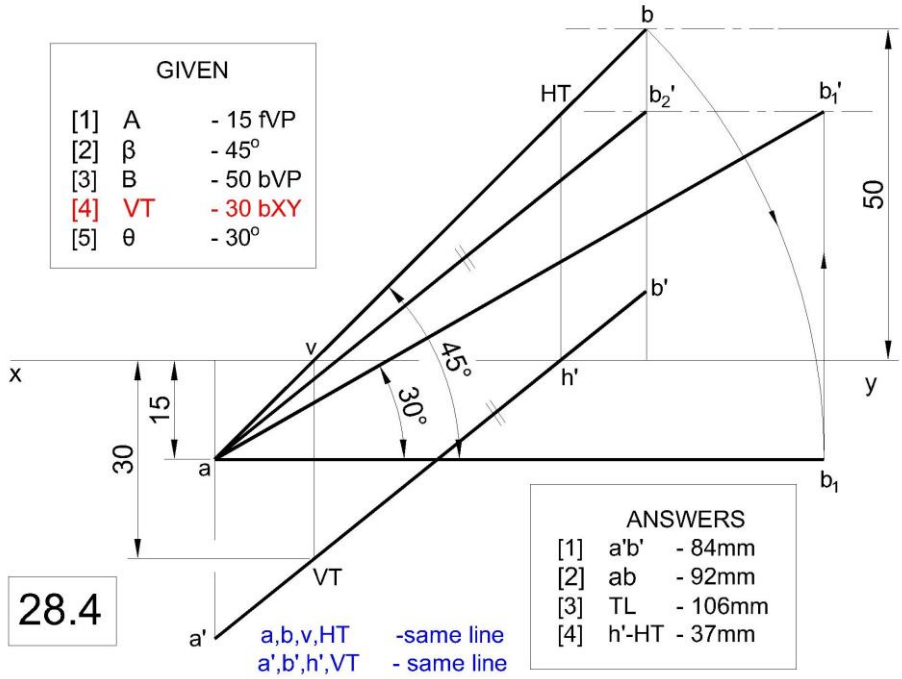


ANSWERS
[1] a'b' - 84mm
[2] ab - 92mm
[3] TL - 106mm
[4] h'-HT - 37mm

28.3

a,b,v,HT -same line
a',b',h',VT - same line

See YouTube Channel Graphicszone2021 for videos



Q30

PROJECTION OF LINES

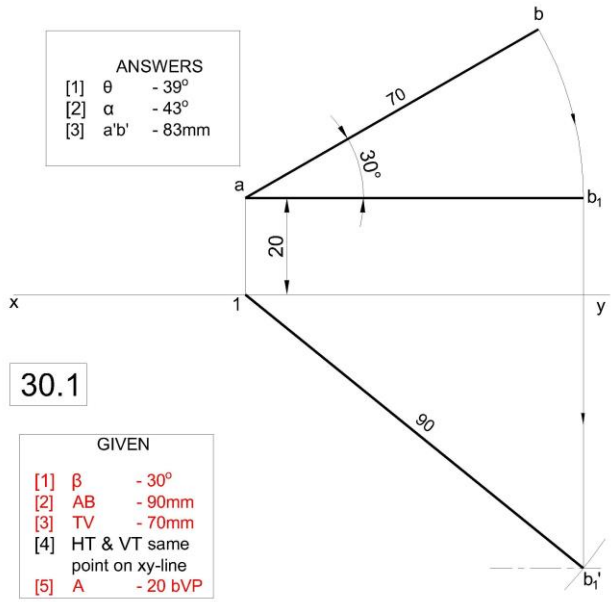
TRACES COINCIDE AT A COMMON POINT ON XY-LINE

41 **GIVEN: TRUE LENGTH; TOP VIEW; APPARENT INCLINATION OF TOP VIEW; COMMON TRACE IN XY**

A line AB 90mm long has its HT and VT coinciding at a common point on the xy-line. The top view is 70mm long and is inclined 30° to the xy-line. One end of the line A is 20mm away from VP. Draw its projection assuming the line is in third quadrant. Measure the inclination of front view with xy-line.

SUMESH 8848440142

[1] AB – 90mm , [2] TV – 70mm, [3] $\beta = 30^0$, [4] A– 20 bVP , [5] HT & VT on xy-line



30.1

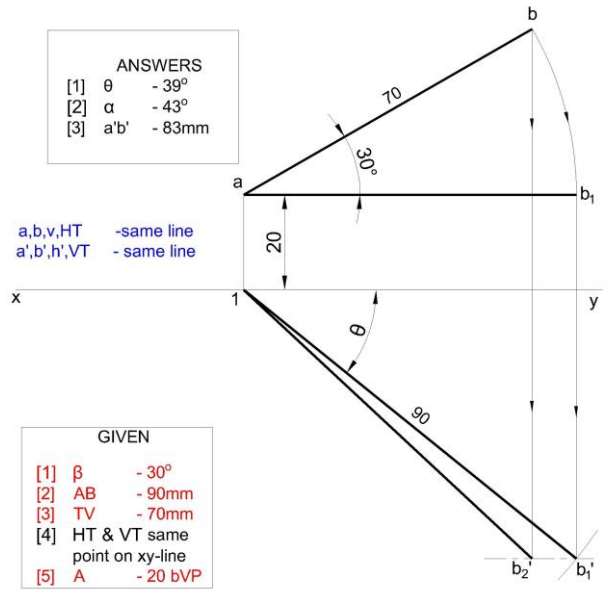
GIVEN

[1] β - 30°
[2] AB - 90mm
[3] TV - 70mm
[4] HT & VT same point on xy-line
[5] A - 20 bVP

ALL DIMENSIONS ARE IN mm

SCALE 1:1

See YouTube Channel Graphicszone2021 for videos



GIVEN

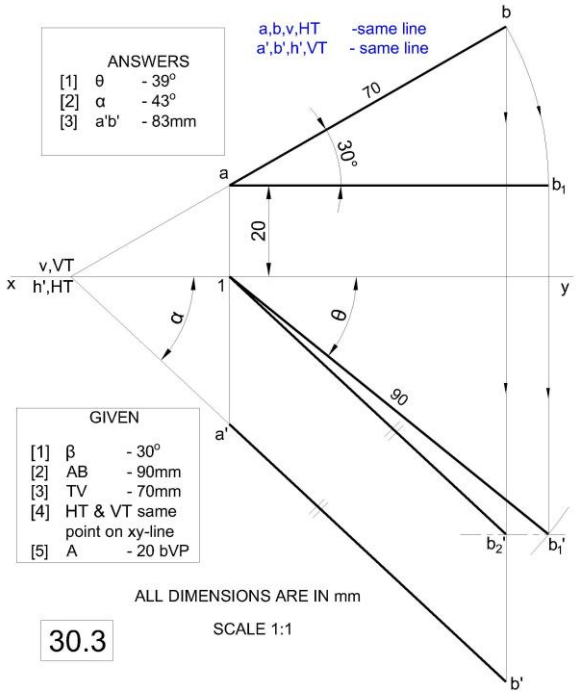
[1] β - 30°
[2] AB - 90mm
[3] TV - 70mm
[4] HT & VT same point on xy-line
[5] A - 20 bVP

ALL DIMENSIONS ARE IN mm

SCALE 1:1

30.2

See YouTube Channel Graphicszone2021 for videos



Q37

PROJECTION OF LINES

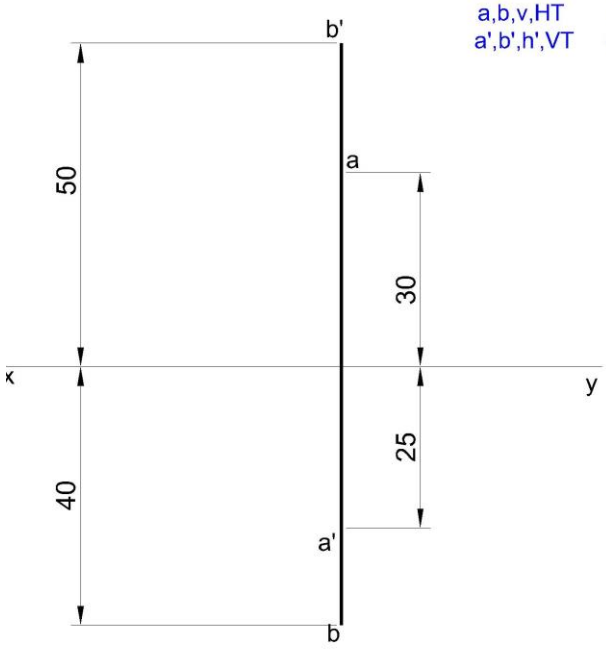
PROJECTION IN THE SAME PROJECTOR- $\theta + \emptyset = 90^0$

42 GIVEN: POSITIONS OF TWO ENDS; CONDITION OF PROJECTORS

The ends of the line AB are on same projector. A is 25mm below HP and 30mm behind VP. The end B is 50mm above HP and 40mm in front of VP. Draw the projection and find the true length and true inclinations.

SUMESH 8848440142

[1] A, B on Same Projector [2] A– 25 bHP, [3] A– 30 bVP, [4] B– 50 aHP , [5] B – 40 fVP



a,b,v,HT -same line
a',b',h',VT - same line

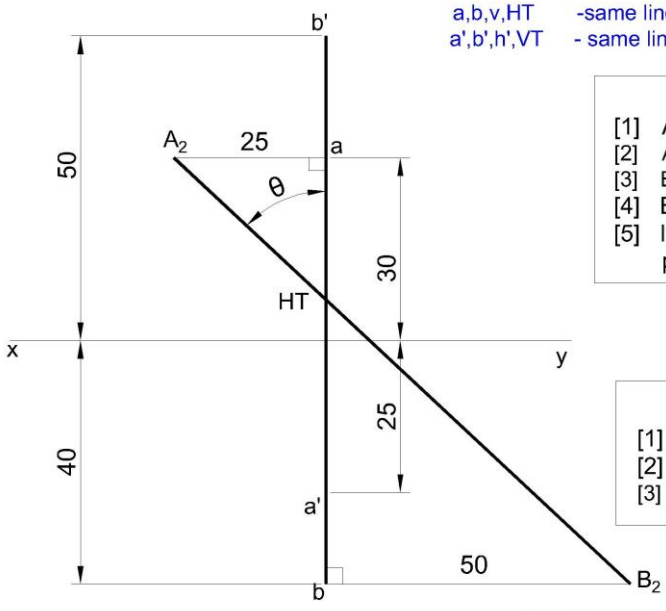
37.1

GIVEN
[1] A - 25 bHP
[2] A - 30 bVP
[3] B - 50 aHP
[4] B - 40 fVP
[5] line on same projector

ANSWERS
[1] θ - 47°
[2] φ - 43°
[3] TL - 103mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm



a,b,v,HT -same line
a',b',h',VT - same line

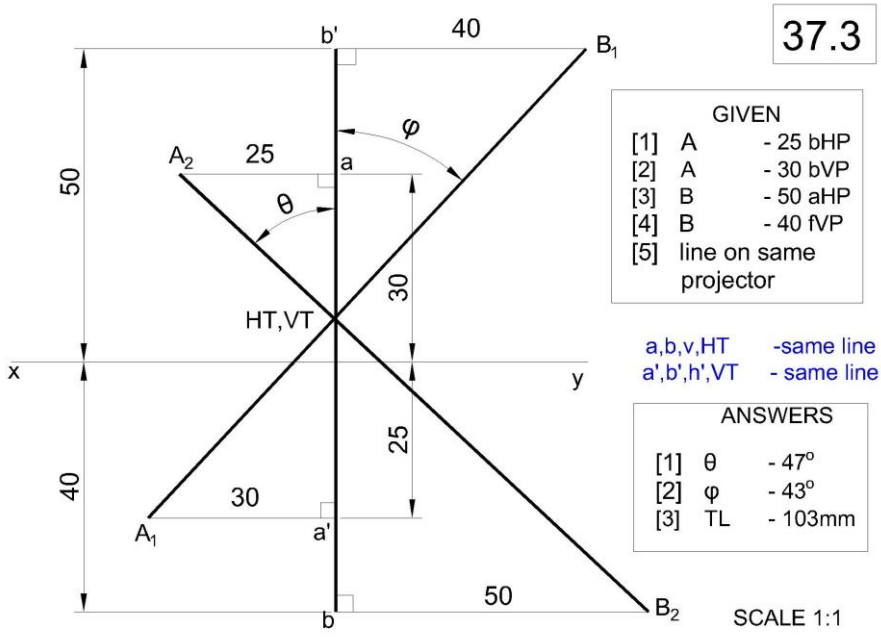
37.2

GIVEN
[1] A - 25 bHP
[2] A - 30 bVP
[3] B - 50 aHP
[4] B - 40 fVP
[5] line on same projector

ANSWERS
[1] θ - 47°
[2] φ - 43°
[3] TL - 103mm

See YouTube Channel Graphicszone2021 for videos

SCALE 1:1
ALL DIMENSIONS ARE IN mm



See YouTube Channel Graphicszone2021 for videos

Q18

PROJECTION OF LINES

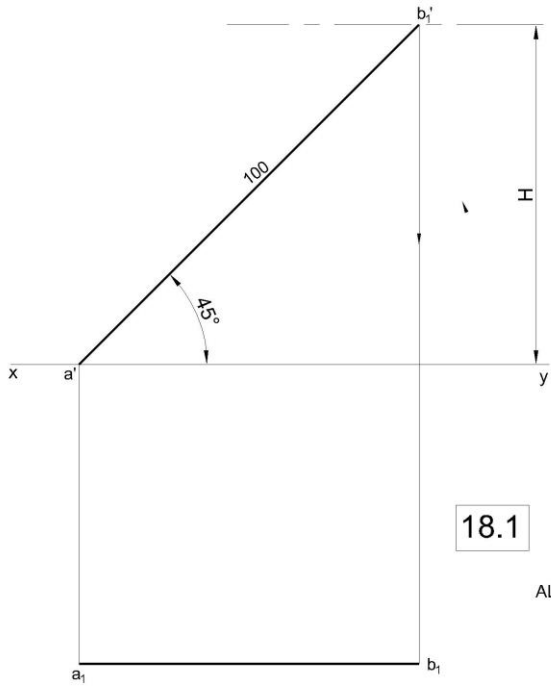
POSITION OF FIRST POINT IS NOT GIVEN DIRECTLY

43 GIVEN: TRUE LEGTH; TRUE INCLINATIONS; ONLY ONE CONDITIONS FOR TWO POINTS

Draw the projections of the line AB, 100mm long, inclined 45° to the ground and 30° to VP, and the end A is on the ground and the end B is in the VP. What is the height of the point B above HP.

SUMESH 8848440142

[1] AB – 100mm , [2] $\theta = 45^0$, [3] $\phi = 30^0$, [4] B – in VP , [5] A – in HP



GIVEN

[1] A - on HP
[2] B - on VP
[3] θ - 45°
[4] ϕ - 30°
[5] AB - 100mm

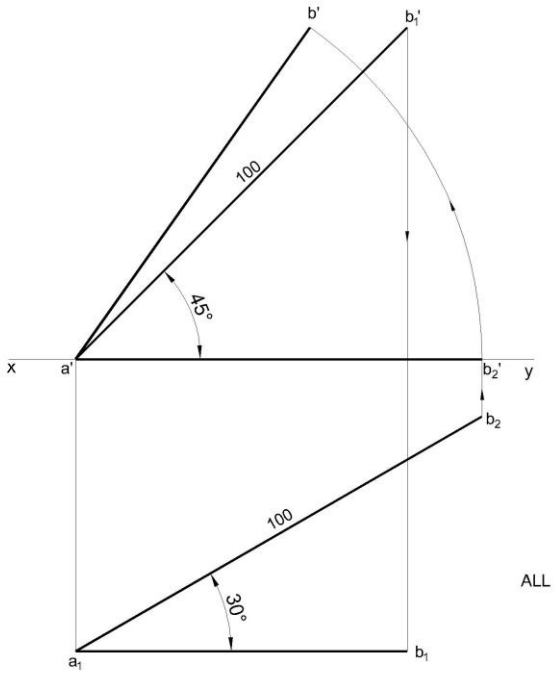
ANSWERS

[1] H - 71mm
[2] L - 50mm

18.1

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] A - on HP
[2] B - on VP
[3] θ - 45°
[4] ϕ - 30°
[5] AB - 100mm

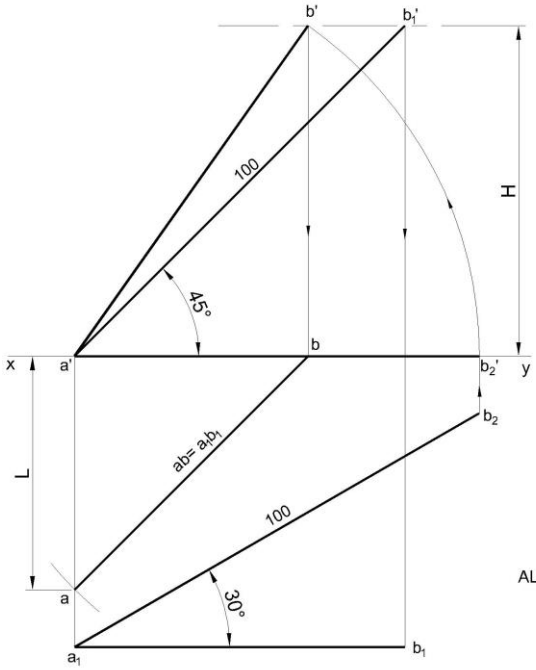
ANSWERS

[1] H - 71mm
[2] L - 50mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

18.2

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1] A - on HP
[2] B - on VP
[3] θ - 45°
[4] ϕ - 30°
[5] AB - 100mm

ANSWERS

[1] H - 71mm
[2] L - 50mm

SCALE 1:1
ALL DIMENSIONS ARE IN mm

18.3

See YouTube Channel Graphicszone2021 for videos

Q39

PROJECTION OF LINES

ASSUMING THE POSITIONS INITIALLY

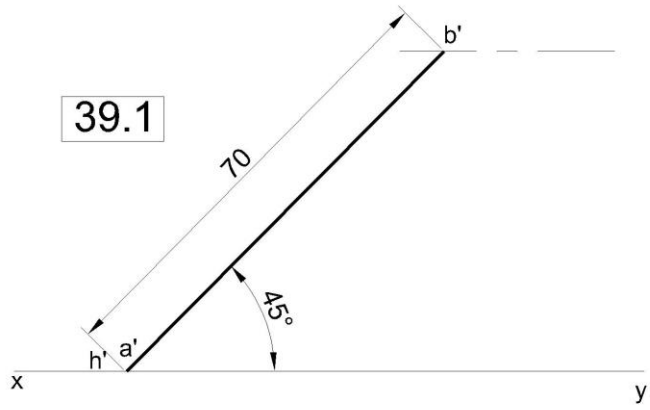
44 **GIVEN: FRONT VIEW; VERTICAL TRACE; TRUE INCLINATION WITH VP**

AB is a straight line whose front view measures 70mm and makes an angle 45° with xy-line. The end A is in the HP and the vertical trace of the line is 10mm below the HP. The straight line is inclined 30° to the VP. Draw the projections of the line AB and find the true length and true inclinations with HP.

SUMESH 8848440142

[1] FV – 70mm [2] A– on HP, [3] VT– 10 bHP, [4] $\alpha = 45^0$, [5] $\emptyset = 30^0$

39.1



GIVEN

[1] FV - 70mm
[2] VT - 10 bHP
[3] α - 45°
[4] φ - 30°
[5] A - on HP
(assume A on VP initially)

a,b,v,HT -same line
a',b',h',VT - same line

ANSWERS

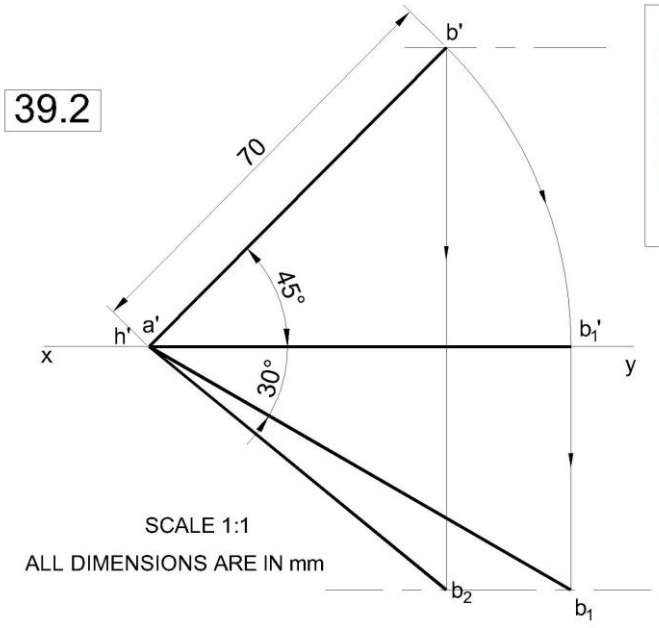
[1] θ - 38°
[2] ab - 64mm
[3] TL - 81mm

SCALE 1:1

ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos

39.2



GIVEN

[1] FV - 70mm
[2] VT - 10 bHP
[3] α - 45°
[4] φ - 30°
[5] A - on HP
(assume A on VP initially)

a,b,v,HT -same line
a',b',h',VT - same line

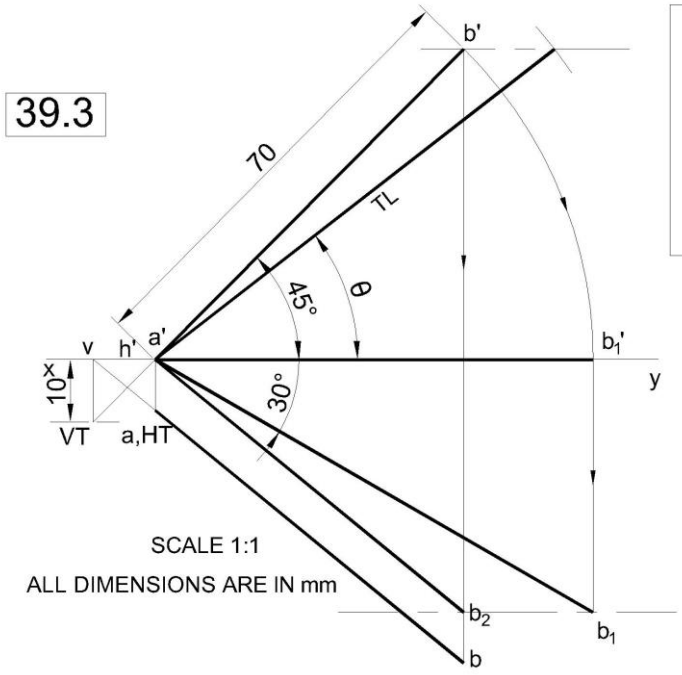
ANSWERS

[1] θ - 38°
[2] ab - 64mm
[3] TL - 81mm

SCALE 1:1

ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



GIVEN

[1]	FV	- 70mm
[2]	VT	- 10 bHP
[3]	α	- 45°
[4]	φ	- 30°
[5]	A	- on HP (assume A on VP initially)

a,b,v,HT -same line
a',b',h',VT - same line

ANSWERS

[1]	θ	- 38°
[2]	ab	- 64mm
[3]	TL	- 81mm

See YouTube Channel Graphicszone2021 for videos

Q41

PROJECTION OF LINES

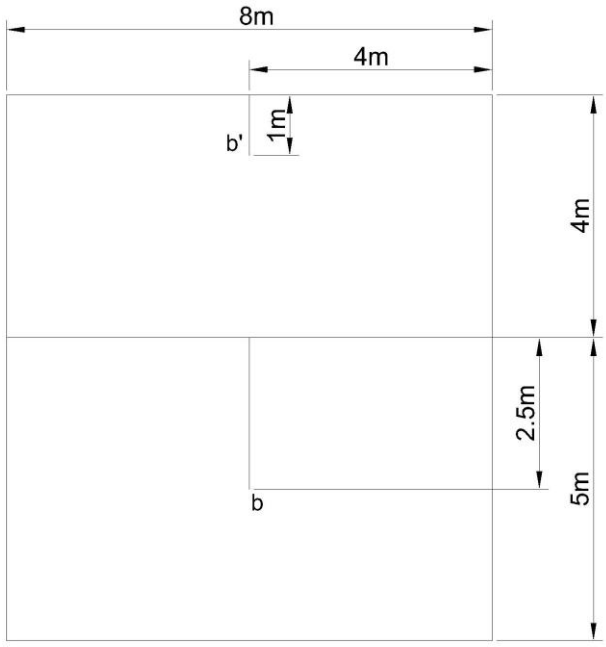
APPLICATION PROBLEM – HANGING BULB -USE OF SCALE

45 **GIVEN: POSITION OF THE BULB AND SIZE OF THE ROOM; POSITION OF THE IMAGE**

A room measures 8m long, 5m wide and 4m high. An electric bulb hangs in the center of the ceiling and 1m below it. There is a black spot on the bulb surface. When the bulb is switched on the image of the black spot falls on one of the corner of the room at a height of 1m above the floor. Determine the length of line joining the bulb and the black spot.

SUMESH 8848440142

POSITION OF THE BULB & IMAGE – USE SCALE 1:100



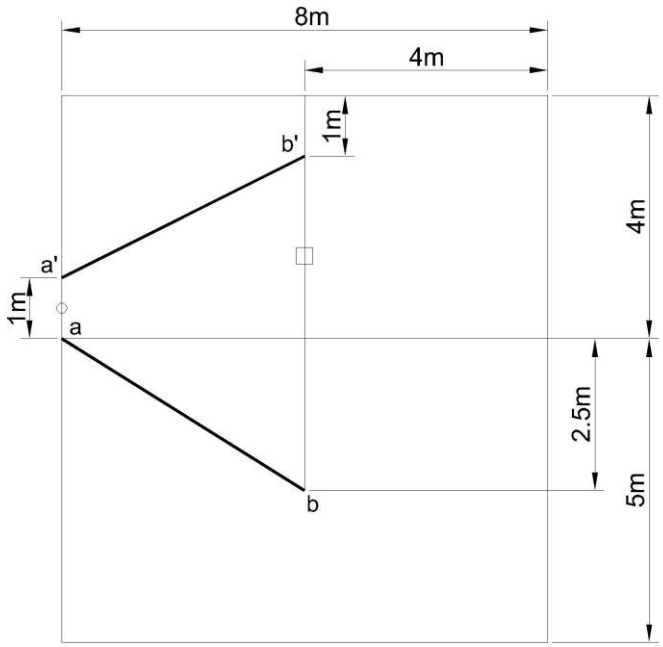
41.1

ANSWER

[1] TL - 5.1m

SCALE 1:100
80mm : 8m
80mm : 8000mm
1: 100

See YouTube Channel Graphicszone2021 for videos



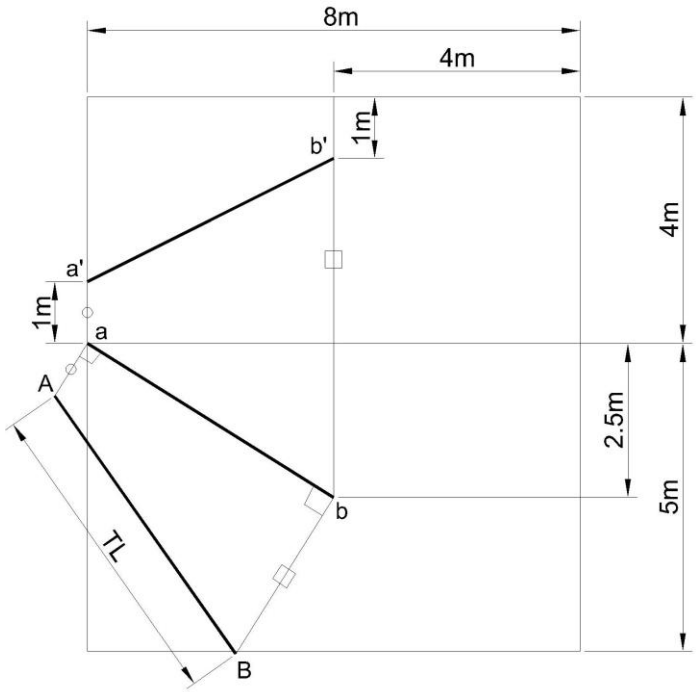
41.2

ANSWER

[1] TL - 5.1m

SCALE 1:100
80mm : 8m
80mm : 8000mm
1: 100

See YouTube Channel Graphicszone2021 for videos



41.3

ANSWER

[1] TL - 5.1m
AB = 51mm
51mm x 100
5.1mm = 5.1m

SCALE 1:100
80mm : 8m
80mm : 8000mm
1: 100

See YouTube Channel Graphicszone2021 for videos

Q202

PROJECTION OF LINES

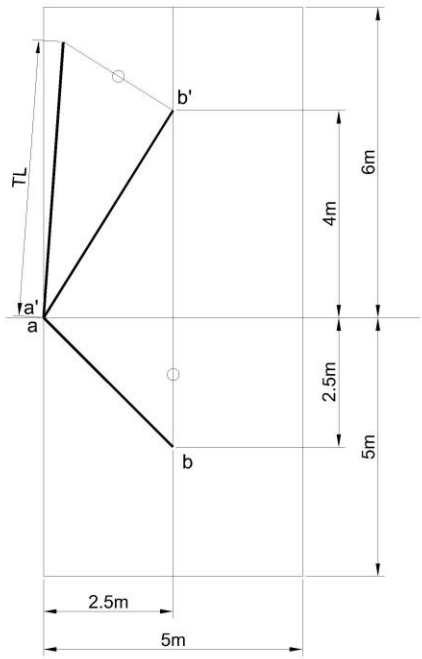
APPLICATION PROBLEM

46 DIMENSION OF THE ROOM AND POSITION OF BULB IS GIVEN

An electric lamp is hung vertically from the center of the flat roof of a room (5m x 5m and height 6m), at a height of 4m above the floor. Find graphically the distance between the lamp and any of the floor corner

SUMESH 8848440142

ROOM 5m x 5m x 6m ; POSITION OF LAMP- 4m ABOVE GROUND, VERTICALLY FROM CENTER OF ROOF



202

ANSWER

[1] TL - 5.3m

SCALE 1:100

See YouTube Channel Graphicszone2021 for videos

Q42

PROJECTION OF LINES

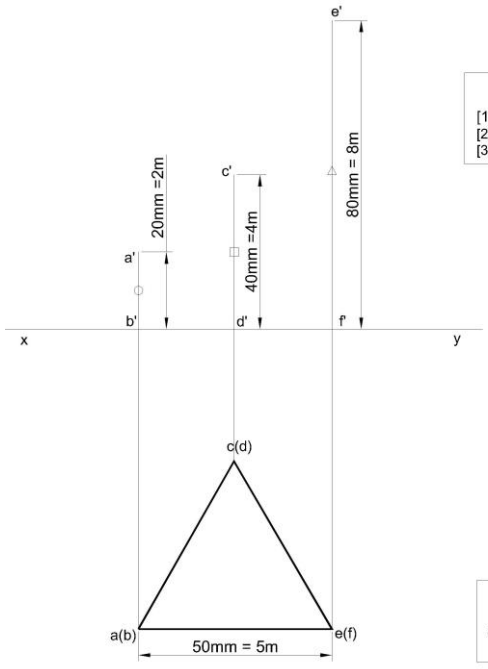
APPLICATION PROBLEM – 3 POLES IN A TRIANGLE

47 GIVEN: HEIGHT OF THE POLES; SIDES OF THE TRIANGLE

Three vertical poles AB, CD, and EF are respectively 2m, 4m, and 8m long and standing on the floor. There ends B, D and F are on the floor and are the corners of an equilateral triangle of side 5m. Determine the distances between the top ends of the poles, i.e., AC, CE and AE. Find also their inclination to the floor. Assume that BF is parallel to VP.

SUMESH 8848440142

SIDE OF TRIANGLE -5m ; AB-2m ; CD-4m ; EF-8m – USE SCALE 1:100

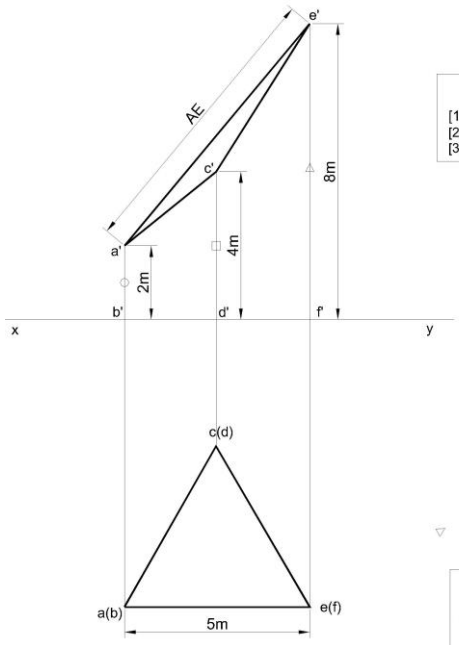


ANSWER
[1] AE - 7.8m
[2] AC - 5.4m
[3] CE - 6.4m

42.1

SCALE 1:100
80mm : 8m
80mm : 8000mm
1: 100

See YouTube Channel Graphicszone2021 for videos

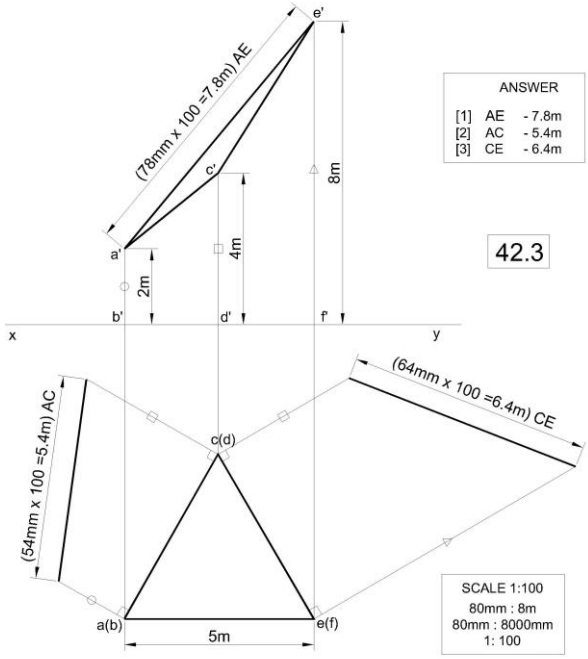


ANSWER
[1] AE - 7.8m
[2] AC - 5.4m
[3] CE - 6.4m

42.2

SCALE 1:100
80mm : 8m
80mm : 8000mm
1: 100

See YouTube Channel Graphicszone2021 for videos



See YouTube Channel Graphicszone2021 for videos

Q43

PROJECTION OF LINES

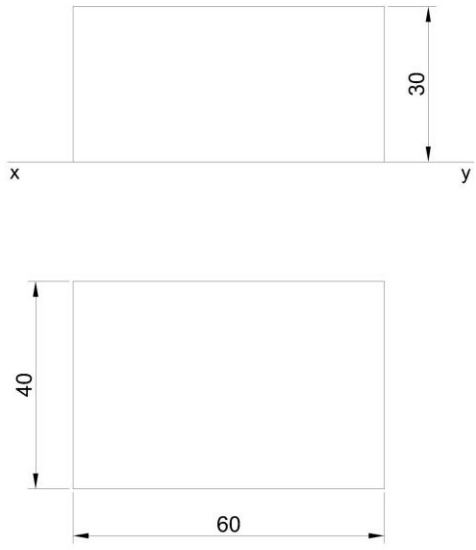
APPLICATION PROBLEM – LARGEST ROD IN A CUBOID

48 GIVEN: SIDES OF THE CUBOID

Find graphically the length of the largest rod that can be kept inside a hollow cuboid of 60mm x 40mm x 30mm.

SUMESH 8848440142

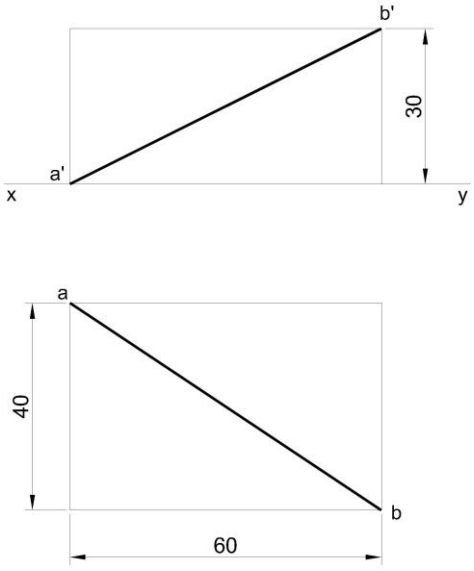
SIDE OF THE CUBOID : L-60mm ; B -40mm ; H-30mm



43.1

SCALE 1:1
ALL DIMENSIONS ARE IN mm

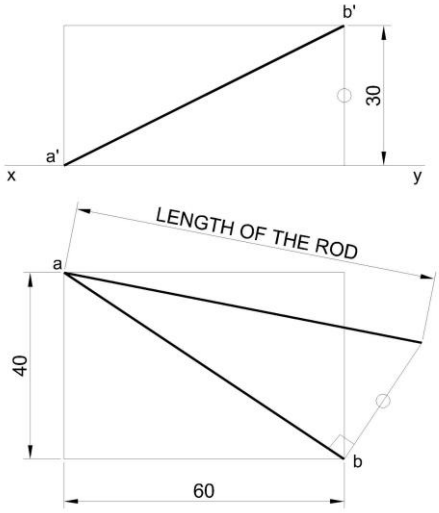
See YouTube Channel Graphicszone2021 for videos



43.2

SCALE 1:1
ALL DIMENSIONS ARE IN mm

See YouTube Channel Graphicszone2021 for videos



43.3

SCALE 1:1
ALL DIMENSIONS ARE IN mm

ANSWER

[1] LENGTH OF THE ROD 78mm

See YouTube Channel Graphicszone2021 for videos

Q194

PROJECTION OF LINES

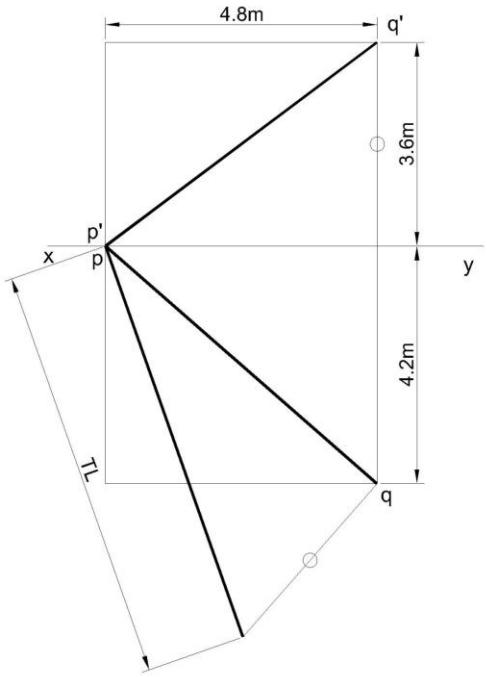
APPLICATION PROBLEM

49 **DISTANCE BETWEEN DIAGONALLY OPPOSITE TOP AND BOTTOM CORNERS OF A ROOM**

A room is 4.8m x 4.2m x 3.6m high. Determine graphically the distance between a top corner and bottom corner diagonally opposite to it.

SUMESH 8848440142

[1] L -4.8m, [2] B -4.2m , [3] H -3.6m



GIVEN

ROOM L-4.8m
B-4.2m; H-3.6m

194

SCALE 1:100
ALL DIMENSIONS ARE IN m

ANSWERS
[1] TL - 7.3m

See YouTube Channel Graphicszone2021 for videos

Q44

PROJECTION OF LINES

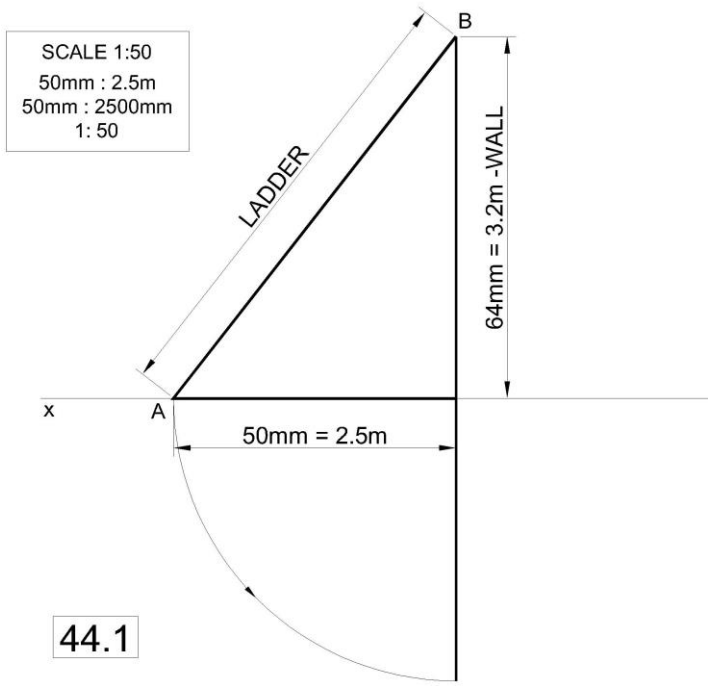
APPLICATION PROBLEM – LADDER

50 **GIVEN: HEIGHT OF THE WALL & POSITION OF THE FOOT OF THE LADDER**

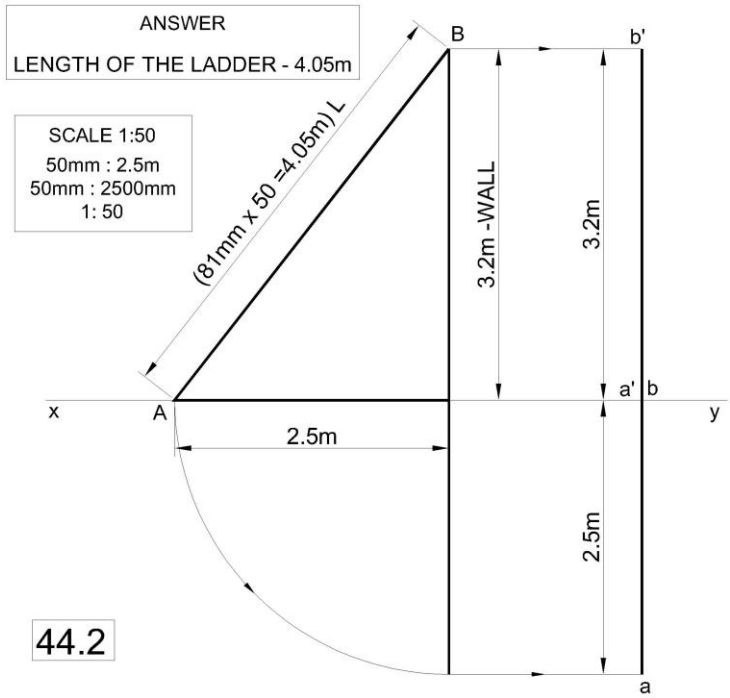
A steel ladder is to be fixed on a vertical wall of height 3.2m. One end of the ladder on the floor is 2.5m away from the vertical wall and the other end is just at the top of the wall. Determine graphically the length of the ladder required.

SUMESH 8848440142

HEIGHT OF THE WALL -3.2m ; FOOT OF THE LADDER FROM THE WALL -2.5m ; SCALE 1:50



44.1



44.2