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Кафедра основ архітектурного проєктування, конструювання, дизайну та графіки

03-07-116М

METHODICAL GUIDELINES

to practical classes, test tasks and
independent work on the academic discipline
«**ENGINEERING AND CONSTRUCTION DRAWING»**
(module 1 «Creating images on drawings») for higher education students of the first (bachelor's) level in the educational and professional programme «Construction and Civil Engineering» in the speciality G19 «Construction and Civil Engineering» of full-time and extramural education form

МЕТОДИЧНІ РЕКОМЕНДАЦІЇ

до практичних занять, виконання тестових завдань і
самостійної роботи з навчальної дисципліни
«ІНЖЕНЕРНО-БУДІВЕЛЬНЕ КРЕСЛЕННЯ»
(модуль 1 «Утворення зображень на кресленнях») для здобувачів вищої освіти першого (бакалаврського) рівня за освітньо-професійною програмою «Будівництво та цивільна інженерія» за спеціальністю G19 «Будівництво та цивільна інженерія»» денної та заочної форм навчання

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Methodical guidelines for practical classes, test tasks and independent work in the academic discipline «Engineering and Construction Drawing» (module 1 «Creating images on drawings») for higher education students of the first (bachelor's) level in the educational and professional programme «Construction and Civil Engineering» in the speciality G19 «Construction and Civil Engineering» of full-time and extramural education form [Electronic edition] / Krivtsov V. V., Litnitskyi S. I. – Rivne : NUWEE, 2025. – 49 p.

Методичні рекомендації до практичних занять, виконання тестових завдань і самостійної роботи з навчальної дисципліни «Інженерно-будівельне креслення» (модуль 1 «Утворення зображень на кресленниках») для здобувачів вищої освіти першого (бакалаврського) рівня за освітньо-професійною програмою «Будівництво та цивільна інженерія» за спеціальністю G19 «Будівництво та цивільна інженерія»» денної та заочної форм навчання [Електронне видання] / Крівцов В. В., Літніцький С. І. – Рівне : НУВГП, 2025. – 49 с.

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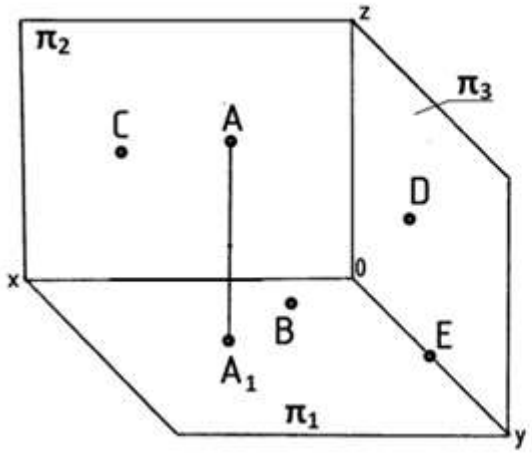
CONTENTS

Topic 1. Point

Task № 1. Construct projections on the visual image (Fig. 1): point A, which does not belong to the projection planes; points B, C and D, which belong to the projection planes π1, π2 and π3, respectively; point E, which lies on the y-axis. According to the visual image, construct a epure of the points (Fig. 2) and write down their coordinates in millimeters in the table.



Points		A	B	C	D	E
Coor-dinates	x					
	y					
	z					

Fig. 1

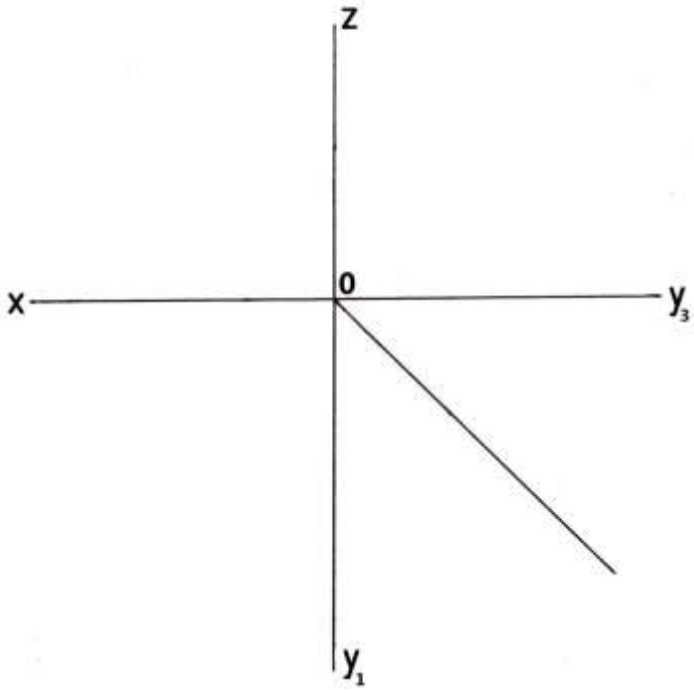


Fig. 2

Note: In the visual image made in frontal dimetry (Fig. 1), the coordinates of points, for example point A, are marked on the x and z axes at their natural values, and on the y axis they are reduced by half (see Fig. 3, а –epure, Fig. 3, б – visual image in frontal dimetry)

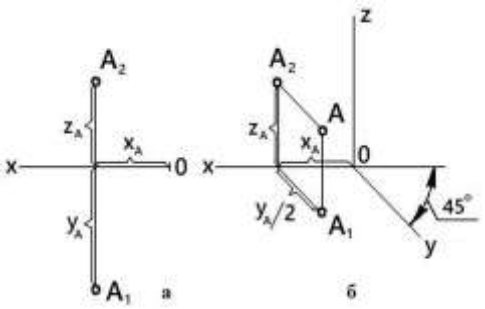


Fig. 3

Task №2. Figure 4 shows a visual image of a beam, and Figure 5 shows its front and top views. Construct a left view of the transom and projections of points A, B, and D marked on the beam surfaces. Also construct projections of points B^1, C^1, and D^1 located on the faces of the beam opposite points B, C, and D.

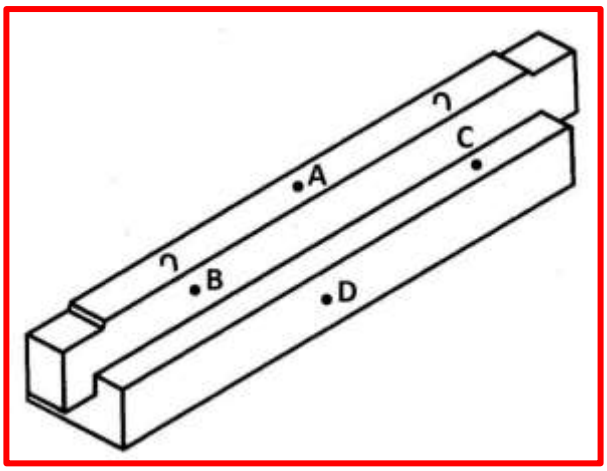


Fig. 4

Note: a transom is a horizontally placed element of a building structure that provides support for floor slabs. Fig. 4, 5 shows a transom with two shelves to provide support for floor slabs on two sides.

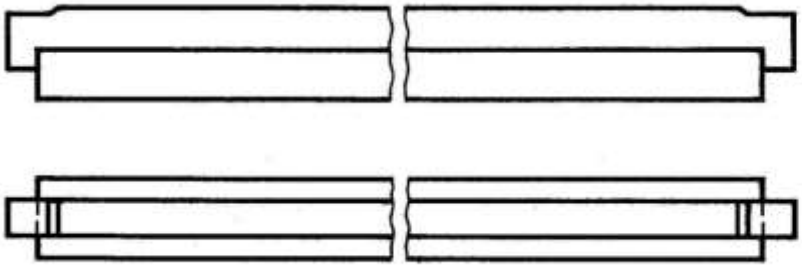


Fig. 5

Task № 3. Construct a epure of point A (40,30, 20) using coordinates in millimeters, Fig. 6. Determine the distance from point A to the projection planes π_1, π_2, π_3 and to the projection axes x, y, z, and also to point 0 – the beginning of the coordinates. Use Fig. 7 to solve.

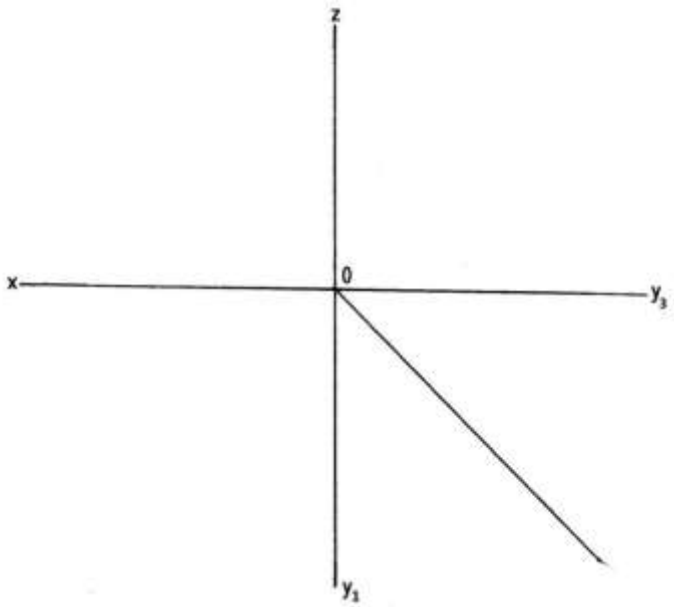


Fig. 6

Distance from point A to:
plane π_1____ mm;
plane π_2 _____ mm;
plane π_3 _____ mm;
axe x_____mm;
axe y_____mm;
axe z_____ mm;
point 0 – the beginning of the coordinates _____mm.

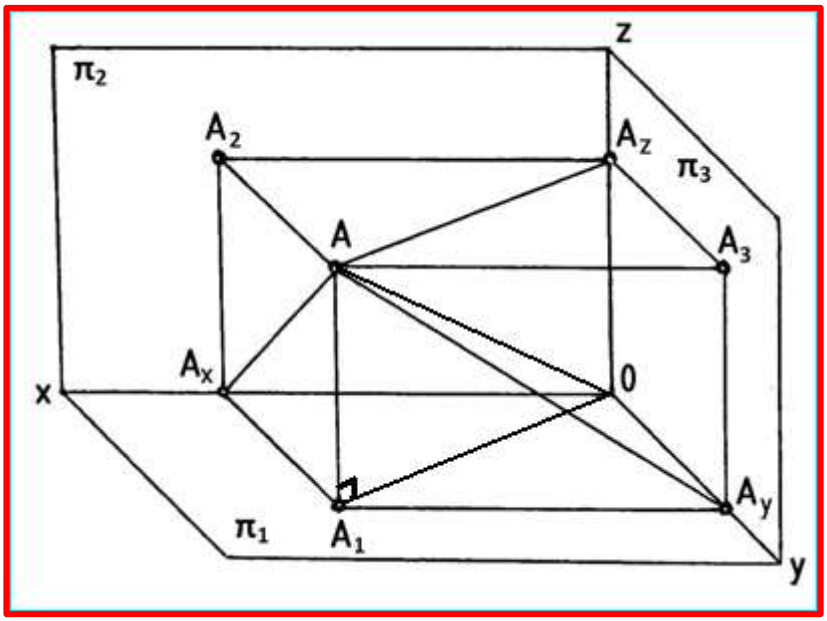
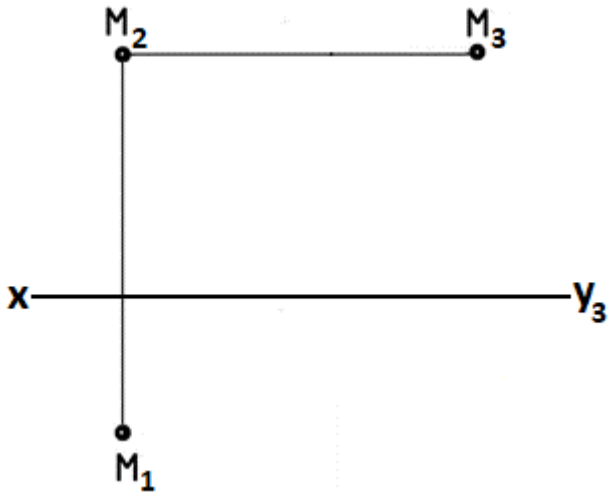


Fig. 7

Task № 4. Find the position of the vertical axis z on the epure of the point M (Fig. 8). Determine the distance in millimeters from point M to point 0 – the beginning of the coordinates.



Distance from point M to point 0 – the beginning of the coordinates _____mm.

Fig. 8

Task № 5. Using the horizontal and frontal projections of the cube (Fig. 9), construct the projection axes x, y, z, if it is known that the cube is 10 mm away from the horizontal projection plane π_1 and 30 mm away from the profile projection plane π_3.

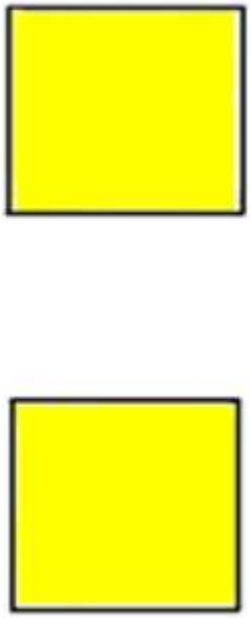


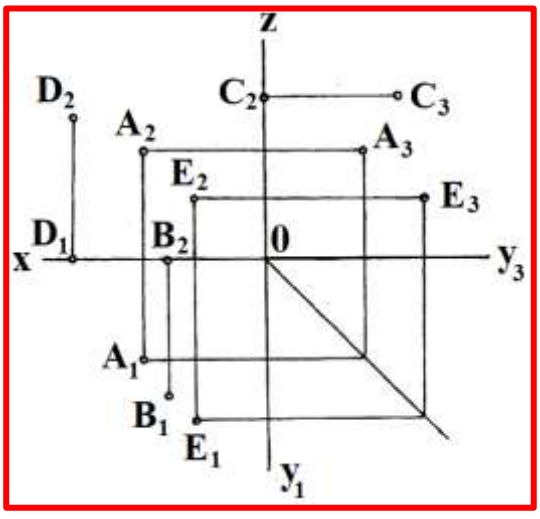
Fig. 9

TEST TASKS FOR TOPIC 1 «POINT»

1.1. Which of the given points is furthest from the horizontal projection plane, the frontal projection plane, and the profile projection plane (Fig. 10)?

1.2. Which of the given points is closer to the horizontal projection plane, the frontal projection plane, and the profile projection plane (Fig. 10)?

1.3. Which of the given points is located in the horizontal projection plane, the frontal projection plane, and the profile projection plane (Fig. 10)?



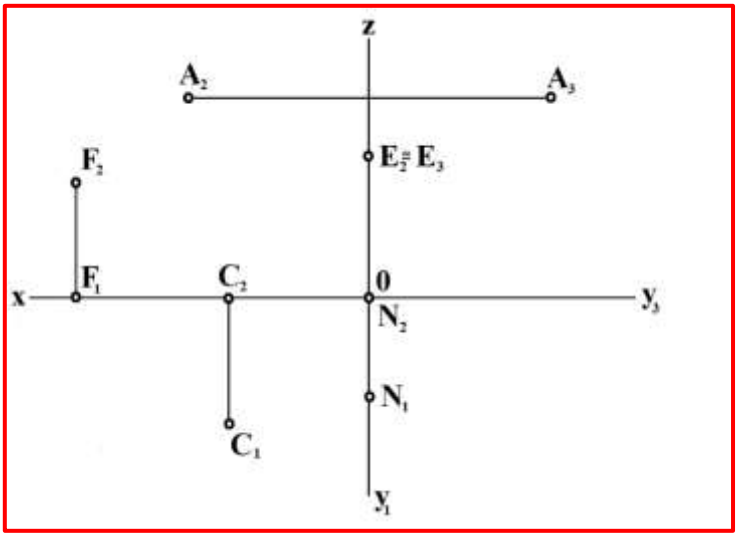
- A
- B
- C
- D
- E

Fig. 10

1.4. Where will the profile projection of point F, point N, point C and the horizontal projection of point E be located (Fig. 11)?

● On the x-axis ●On the y-axis ●On the z-axis ●At point 0 – the beginning of the coordinates.

1.5. Which points belong to two projection planes at the same time, to one projection plane, and do not belong to any of the projection planes (Fig. 11)?



● A
● C
● E
● N
● F

Fig. 11

1.6. Where is the horizontal, frontal, profile projection of a point lying in the frontal plane of projections, in the horizontal plane of projections, in the profile plane of projections located?

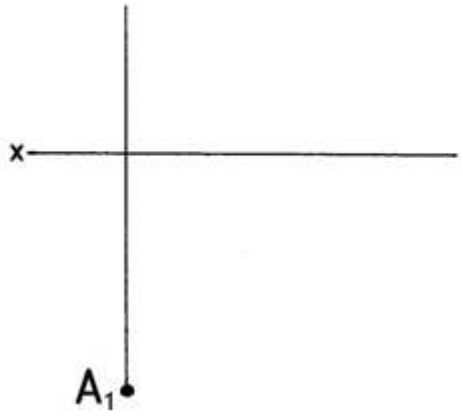
● On the x-axis
● On the y-axis
● On the z-axis
● At the origin
● Coincides with the point itself

1.7. Where is located the point with coordinates $x = 0, y = 0, z \neq 0$; $x = 0, y \neq 0, z = 0$; $x \neq 0, y = 0, z = 0$; $x = 0, y \neq 0, z \neq 0$; $x \neq 0, y = 0, z \neq 0$; $x \neq 0, y \neq 0, z = 0$; $x \neq 0, y \neq 0, z \neq 0$?

● Does not belong to any projection plane
● On the x-axis
● On the y-axis
● On the z-axis
● In the π_1 plane
● In the π_2 plane

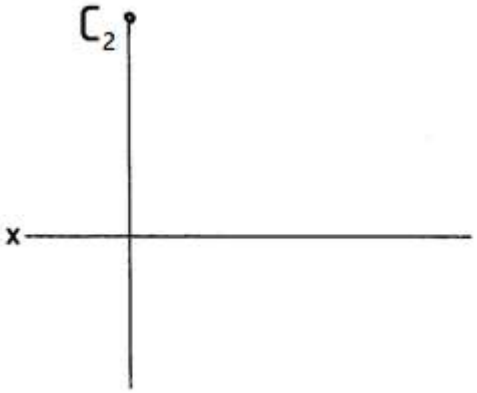
Topic 2. Straight line

Task № 6. Construct epures (projections) of straight line segments AB and CD with a length of 30 mm, if segment AB is parallel to the projection plane π_1, and segment CD is parallel to the projection plane π_2. Segments AB and CD are located at a distance of 25 mm from the projection planes to which they are parallel and are inclined at an angle of 45^0 to the other plane (Fig. 12, Fig. 13).



AB – _____

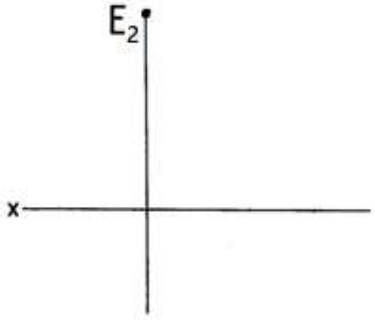
Fig. 12



CD – _____

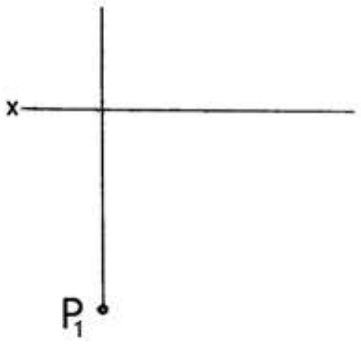
Fig. 13

Task No 7. Construct epures (projections) of straight line segments EF and PR with a length of 25 mm, if segment EF is perpendicular to the projection plane π_1, and segment PR is perpendicular to the projection plane π_2. The segments are 20 mm away from the projection planes to which they are parallel (Fig. 14, Fig. 15). Write the names of the lines.



EF – _____

Fig. 14



PR – _____

Fig. 15

Task № 8. Determine the natural (real) value of the line segment AB and the angles of inclination α and β of the line AB to the projection planes π_1 and π_2 (Fig. 16).

Task № 9. Construct the traces M and N of the straight line AB (Fig. 17).
Note: To solve tasks №№ 8, 9, use Fig. 18-20.

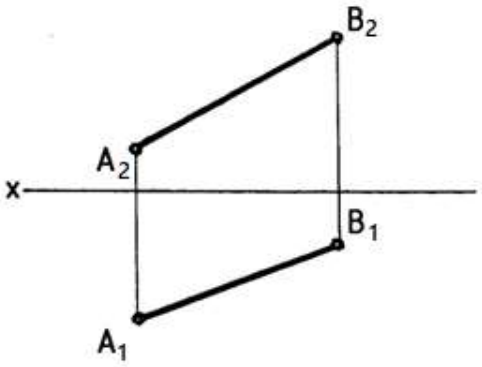


Fig. 16

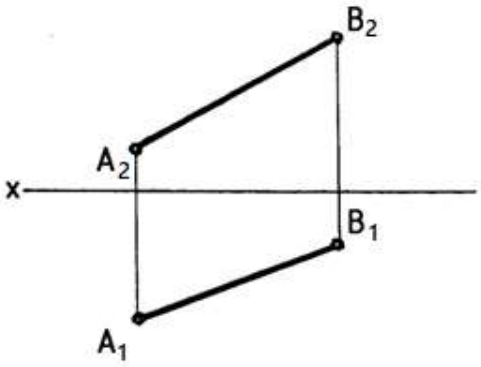


Fig. 17

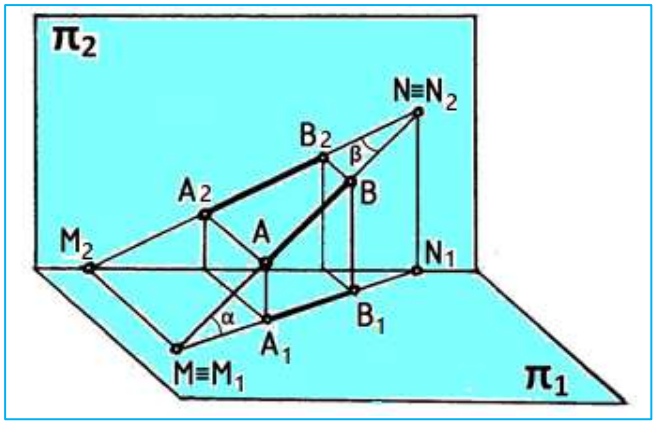


Fig. 18

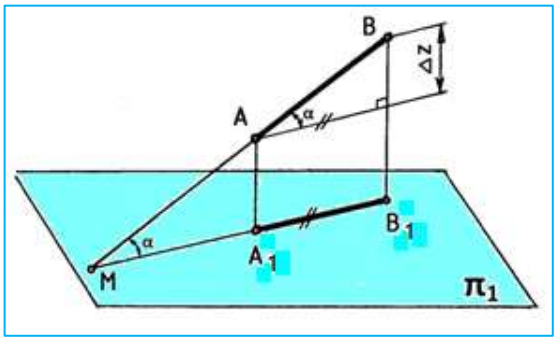


Fig. 19

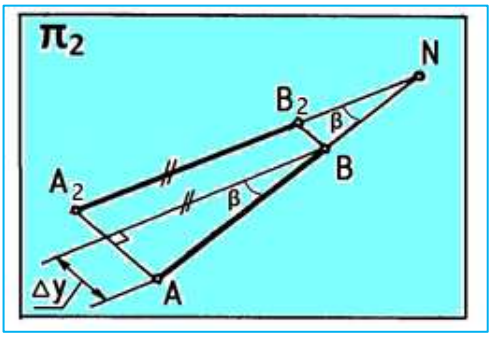


Fig. 20

Task № 10. Using the visual image of the subcolon (Fig. 21), construct its front view (frontal projection) and top view (horizontal projection) on a scale of 1:10. Mark on the projection views the edges AB, BC, CD, DE, indicated on the visual image of the subcolon (Fig. 21), and determine their natural values. On the views, mark the dimensions of the subcolon.

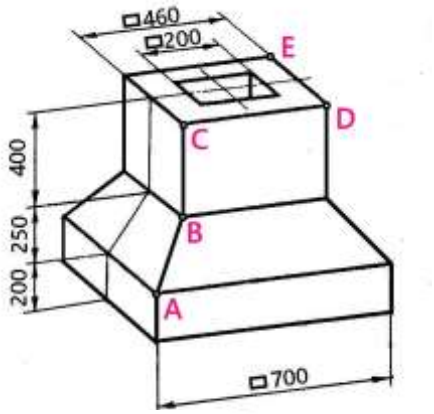


Fig. 21

Natural values of the

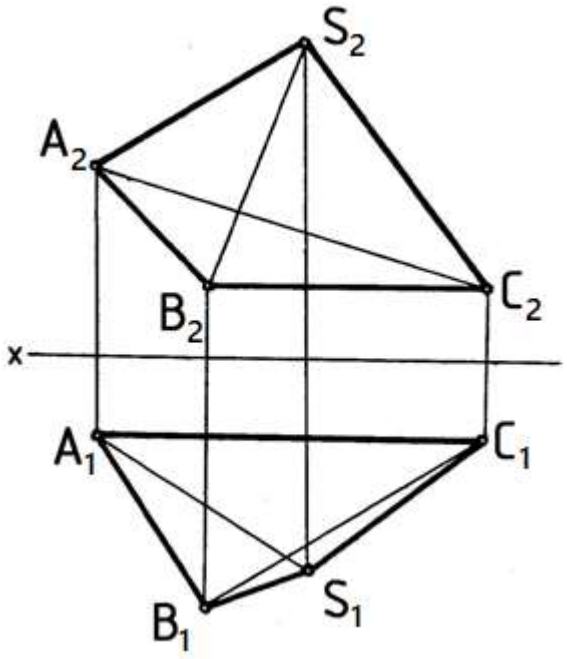
edge AB _____mm,

edge BC _____ mm,

edge CD _____ mm,

edge DE _____ mm.

Task № 11. Determine the visibility of the edges on the horizontal and frontal projections of pyramid ABCS using collinear (competing) points. Indicate the edges that are parallel to the projection planes π_1 and π_2 (Fig. 22). Use Fig. 23 to solve the task.



Collinear (competing) points:

_____

_____

Fig. 22

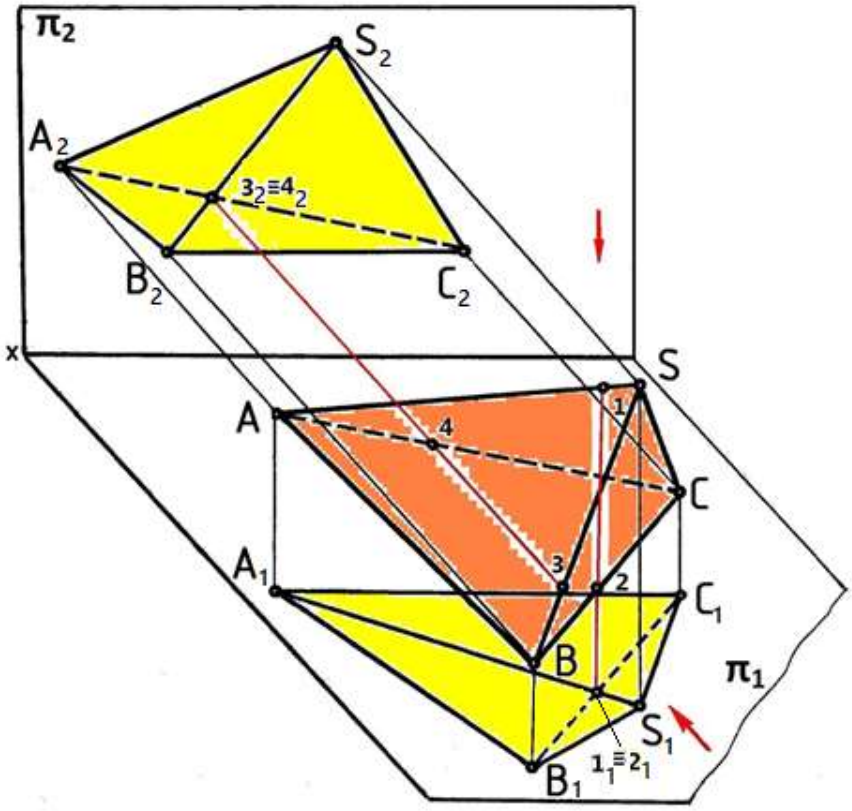


Fig. 23

Task № 12. Construct the projections of the line *k*, which intersects the given lines a, b and c (Fig. 24). Use Fig. 25 to solve the task.

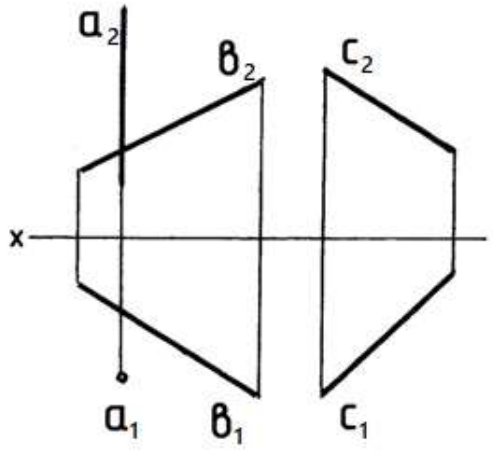


Fig. 24

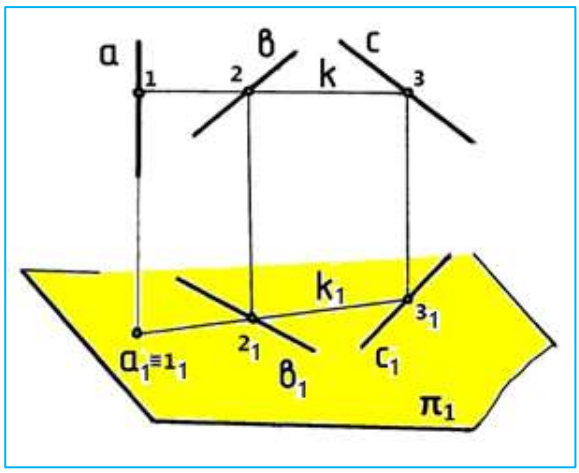


Fig. 25

Task № 13. Determine the distance from point A to the frontal line f (Fig. 26). Use Fig. 27 to solve the task.

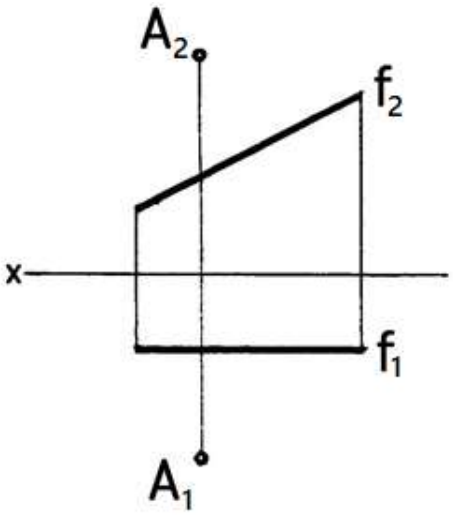


Fig. 26

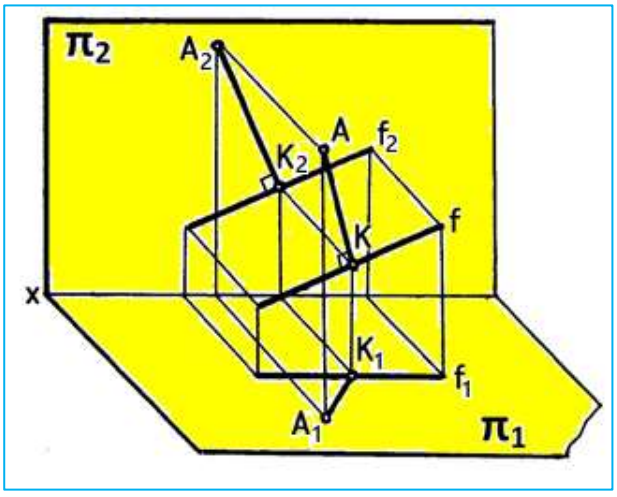


Fig. 27

TEST TASKS FOR TOPIC 2 «STRAIGHT LINE»

2.1. Indicate the angle of inclination of the straight line AB to the horizontal plane of projections, to the frontal plane of projections (Fig. 28).

● $\angle A_1B_1A_O$ ● $\angle A_1B_0B_1$ ● $\angle A_1A_0B_1$ ● $\angle A^1B_2A_2$ ● $\angle A_2A^1B_2$

●absent

2.2. Which segment determines the natural value of segment AB (Fig. 28)?

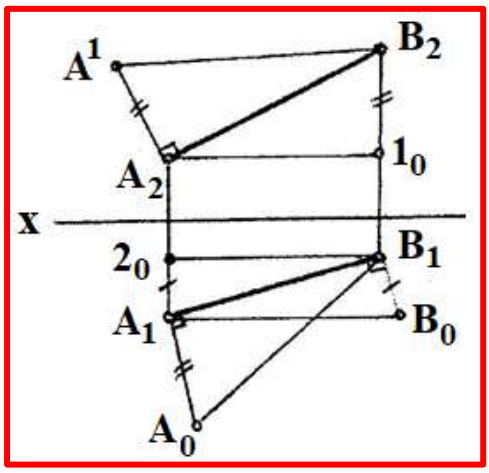


Fig. 28

● A^1B_2
●A_2B_2
● A_1B_1
● A_0B^1
● A_1B_0

2.3. Indicate the name of the segment whose length determines the natural value of the segment AB (Fig. 29).

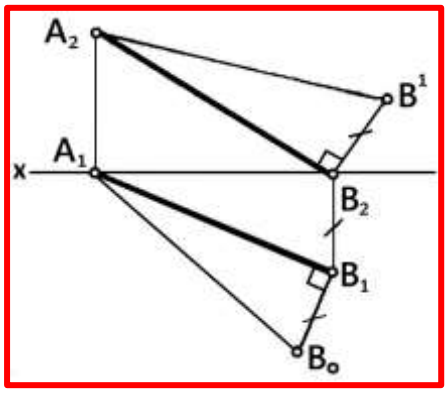


Fig. 29

● A_1B_0
● A_2B^1
● A_1B_1
● A_2B_2

2.4. Indicate the name of the segment whose length is equal to the difference of the z coordinates and the difference of the y coordinates of the endpoints of the segment AB (Fig. 29).

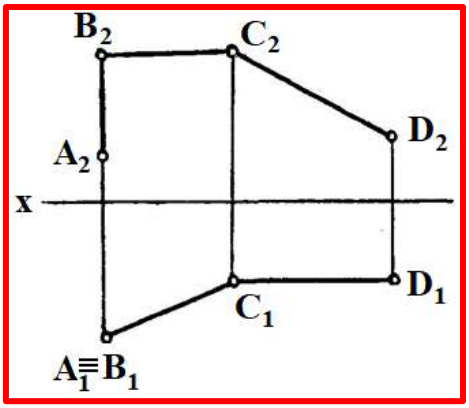
● B_1B_2 ● A_1A_2 ● B_2B^1 ● B_1B_0

2.5. Which point defines the horizontal trace of the straight line AB, the frontal trace of the straight line AB (Fig. 29)?

●A_1 ●A_2 ●B_0 ●B_1 ●B_2 ●B^1

2.6. Which of the segments of the polyline is parallel to the horizontal plane of projections, to the frontal plane of projections (Fig. 30)?

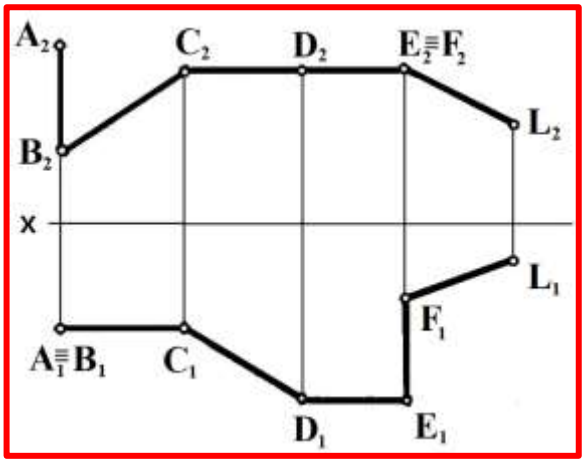
2.7. Which of the segments of the polyline is perpendicular to the horizontal plane of projections, to the frontal plane of projections (Fig. 30)?



- AB
- BC
- CD
- Відсутній

Fig. 30

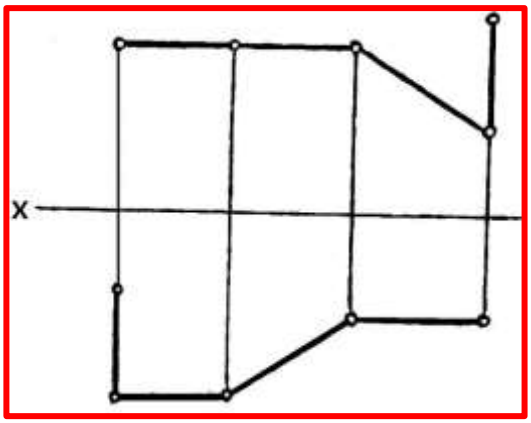
2.8. What number of segments does this polyline consist of (Fig. 31)?



- 3
- 4
- 5
- 6

Fig. 31

2.9. Which of the segments of the polyline (Fig. 32) is parallel to the plane π_1 and to the plane π_2?



- AB
- DC
- CD
- DE
- EF
- FL

Fig. 32

2.10. Which of the segments of the polyline (Fig. 32) is perpendicular to the plane π_1, to the plane π_2, to the plane π_3?

●AB ●DC ●CD ●DE ●EF ●FL

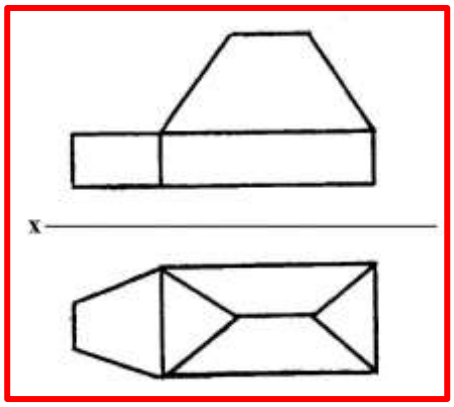
2.11. Which of the segments of the polyline (Fig. 32) occupies the general position?

●AB ●DC ●CD ●DE ●EF ●FL

2.12. How many edges of this figure (Fig. 33) occupy a general position?

2.13. How many edges of this figure (Fig. 33) are parallel only to the projection plane π1?

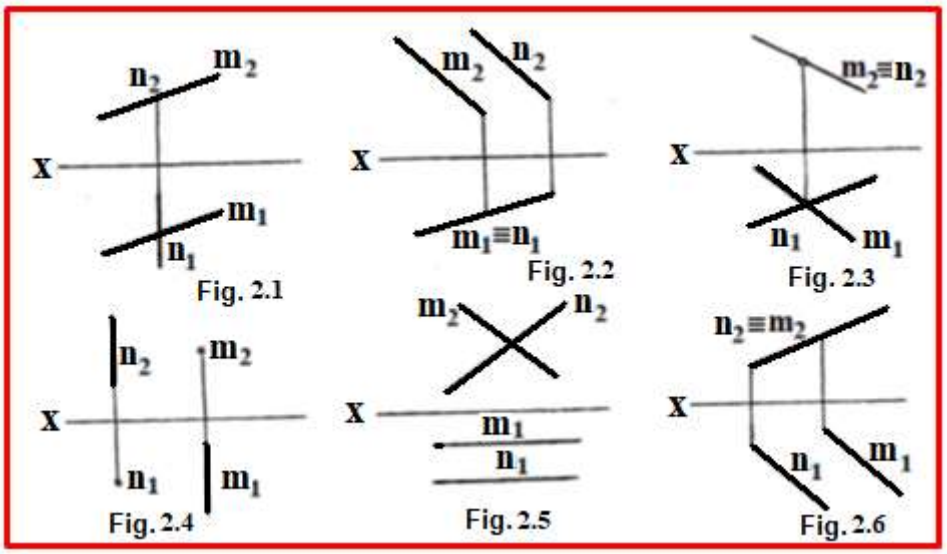
2.14. How many edges of this figure (Fig. 33) are perpendicular to the projection plane π1, to the projection plane π2, to the projection plane π3?



- 2
- 3
- 4
- 5
- 6

Fig. 33

2.5. Which figures (Fig. 2.1 - Fig. 2.6), Fig. 34, show intersecting lines, parallel lines, and skew lines?



- Fig. 2.2, fig. 2.3
- Fig. 2.3, fig. 2.5
- Fig. 2.1, fig. 2.3
- Fig. 2.5, fig. 2.6
- Fig. 2.2, fig. 2.6
- Fig. 2.4, fig. 2.5

Fig. 34

Topic 3. Plane

Task № 14. Complete the horizontal projection of a flat quadrilateral (Fig. 35).

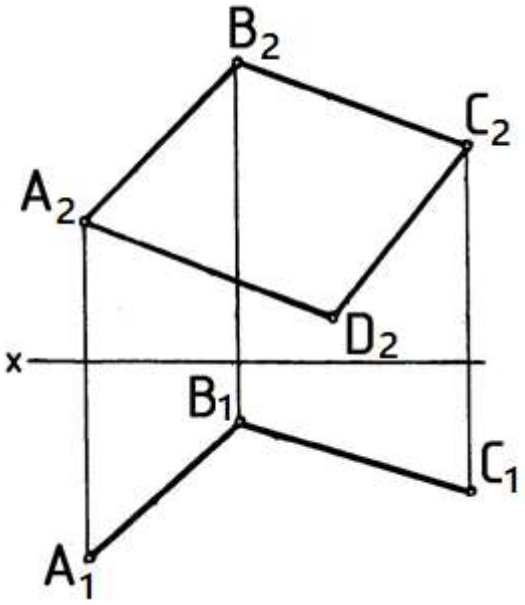


Fig. 35

Task № 15..Construct a horizontal projection of the triangle ABC, which belongs to the plane $\alpha(h^{0\alpha} \cap f^{0\alpha})$, Fig. 36. For the solution, use Fig. 37.

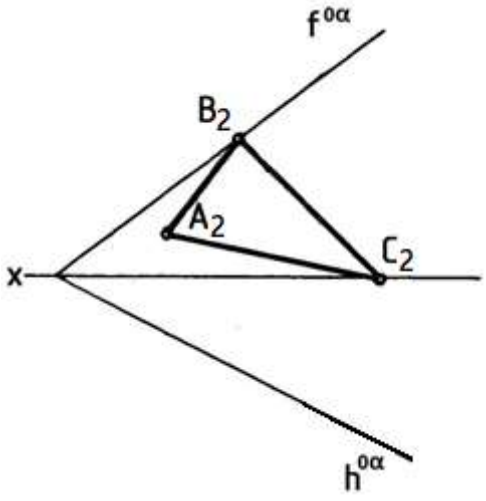


Fig. 36

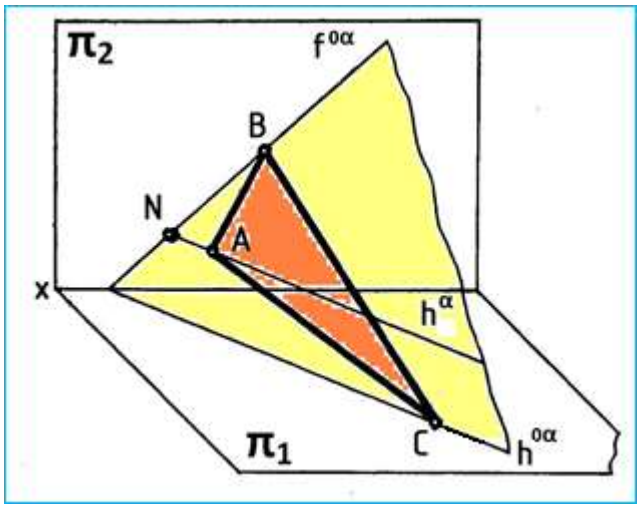


Fig. 37

Task № 16. In the planes given on the epures by the triangle ABC (Fig. 38) and the traces $h^{0\alpha}$ and $f^{0\alpha}$ (Fig. 39), determine the position of point K, which is located at a distance of 20 mm from the plane π_1 and 25 mm from the plane π_2. For the solution, use Fig. 40, Fig. 41.

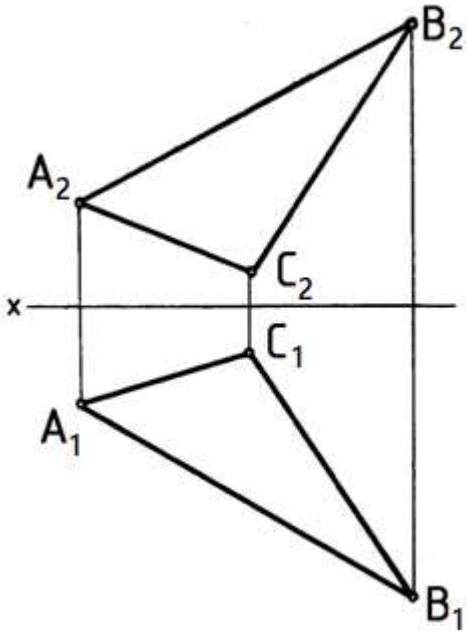


Fig. 38

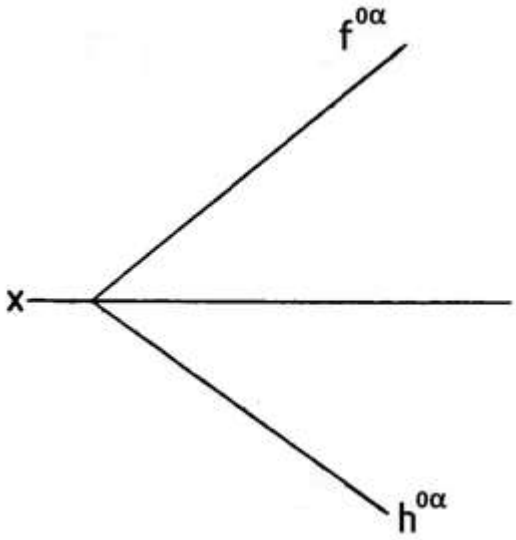


Fig. 39

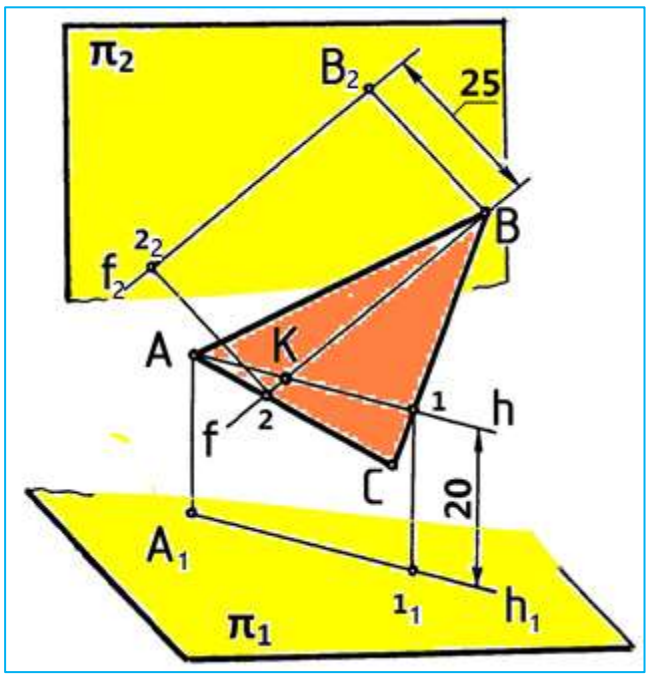


Fig. 40

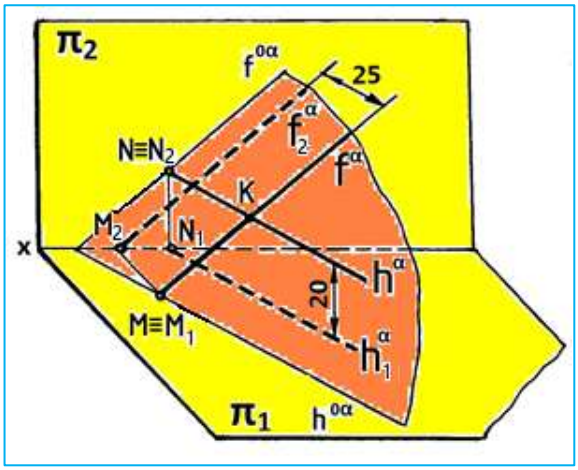


Fig. 41

Task № 17. Using the visual image of the building structure for power line props, Fig. 42, construct its front view, top view and left view on a scale of 1:40. Indicate the dimensions of the building structure.

Construct the projections of points A, B, C of the intersection of the diagonals of the trapezoidal faces A and B of the base of the building structure and face B of the structure's rack. From points A, B, C, draw lines a, b, c perpendicular to faces A, B, C of the building structure, respectively.

Determine the natural (real) value of face A of the base of the building structure by method of flat-parallel movement, as shown in Fig. 43.

Note: Place the front view of the building structure in accordance with the direction A, indicated by the arrow.

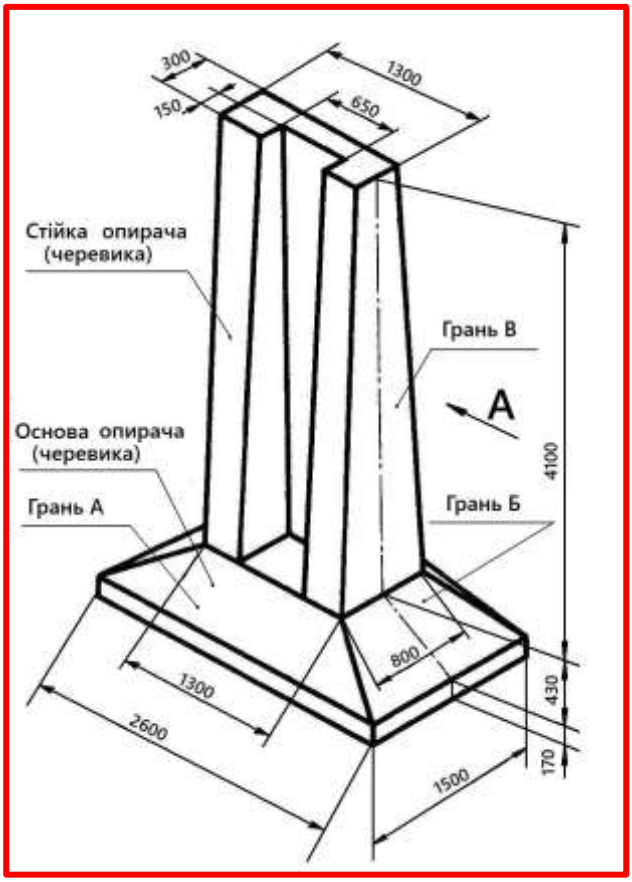


Fig. 42

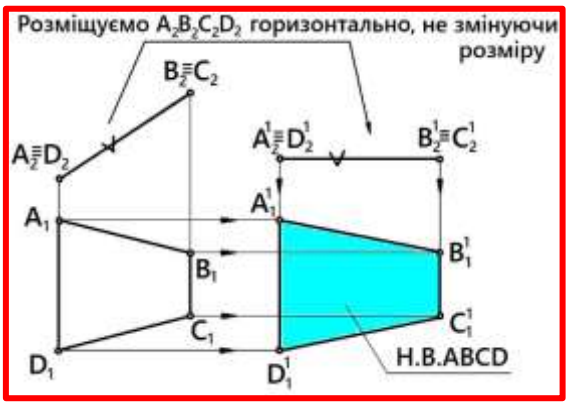


Fig. 43

Page for drawing views of the building structure for power line props

Task № 18. Construct the frontal trace $f^{0\alpha}$ of plane α, which is defined by the horizontal trace $h^{0\alpha}$ and point B (Fig. 44). To solve the task, use Fig. 45.

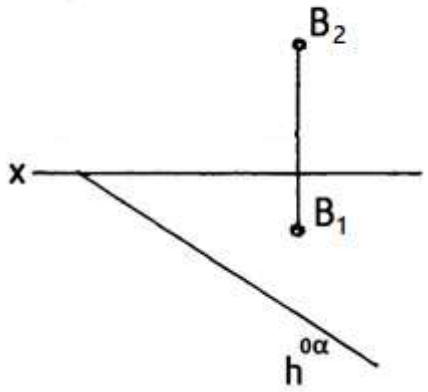


Fig. 44

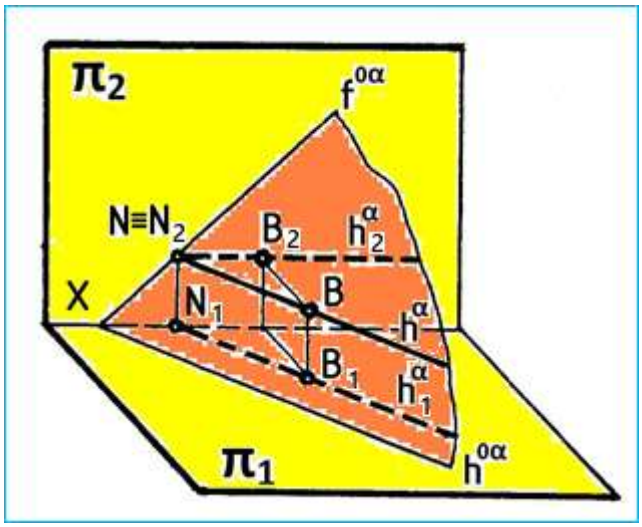


Fig. 45

Task № 19. Determine the angle of inclination α of plane α($h^{0\alpha} \cap f^{0\alpha}$) to projection plane π_1 (Fig. 46). To solve the task, use Fig. 47.

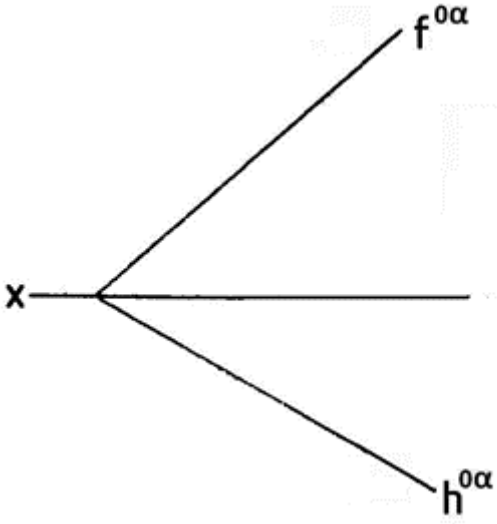


Fig. 46

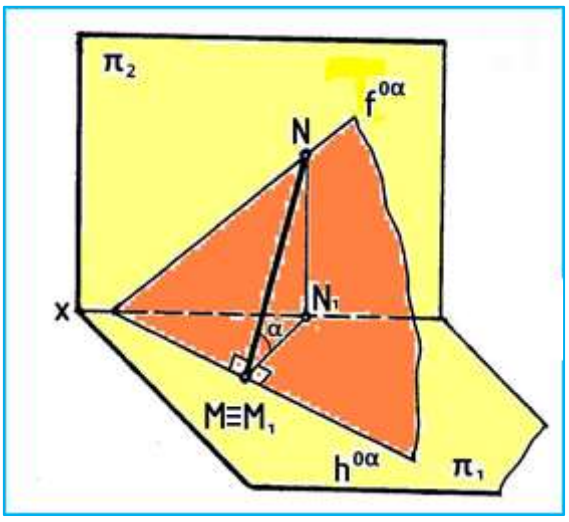
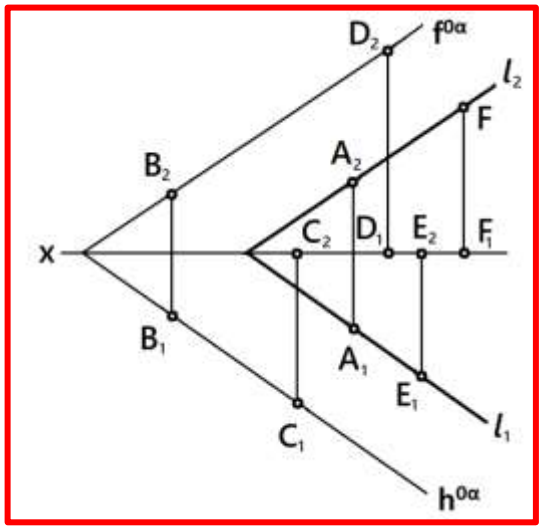


Fig. 47

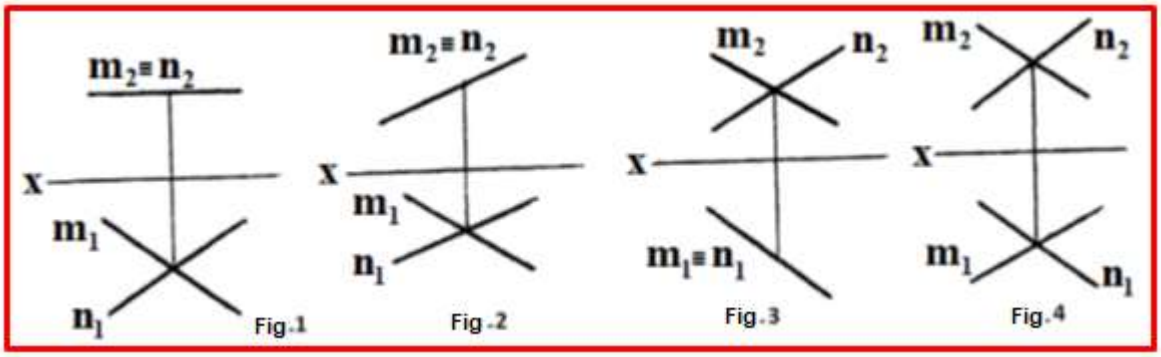
TEST TASKS FOR TOPIC 3 «PLANE»

3.1. What points lie in the plane α ($h^{0\alpha} \cap f^{0\alpha}$)?



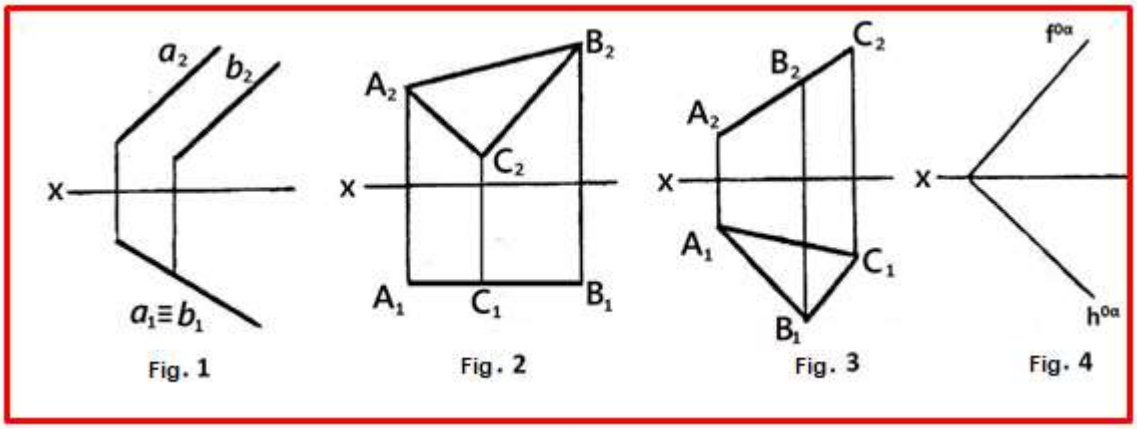
- A i B
- C i D
- E i F
- A i F
- D i E

3.2. Which figure shows the general position plane, the horizontal projection plane, the frontal projection plane, and the level plane?



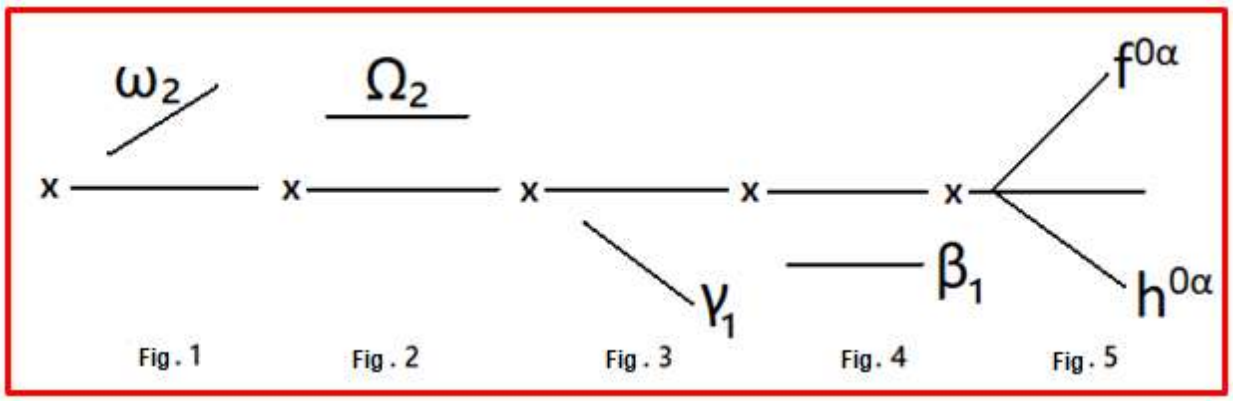
● Fig. 1 ● Fig. 2 ● Fig. 3 ● Fig. 4

3.3. Which figure shows the plane of general position, the horizontal and project plane, the frontal and project plane, and the level plane?



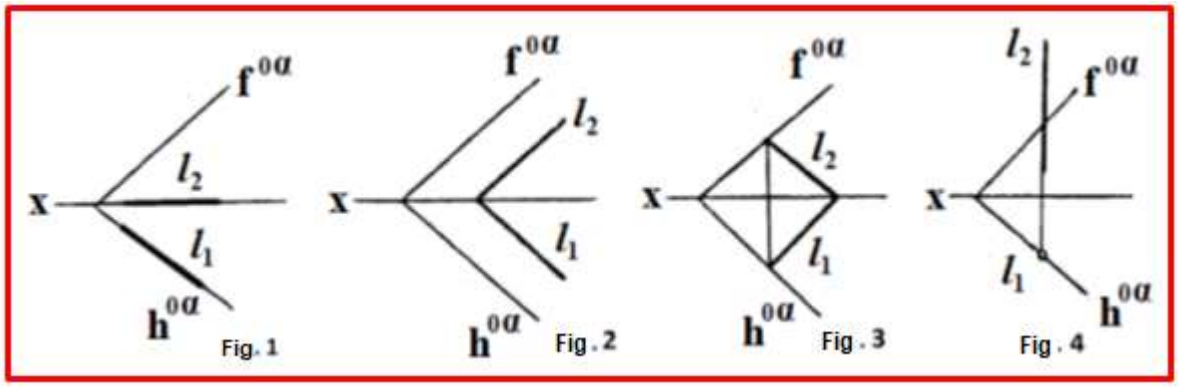
● Fig. 1 ● Fig. 2 ● Fig. 3 ● Fig. 4

3.4. Which figure shows the plane of general position, the horizontal and project plane, the frontal and project plane, the horizontal level plane, and the frontal level plane?



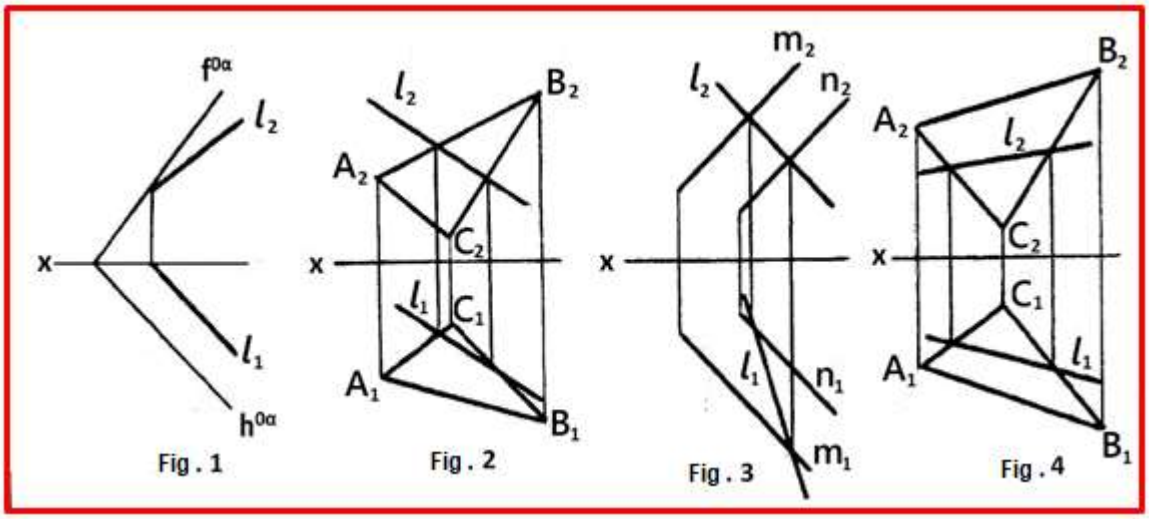
● Fig. 1 ● Fig. 2 ● Fig. 3 ● Fig. 4 ● Fig. 5

3.5. In which figure does the line *l* lie in the plane?



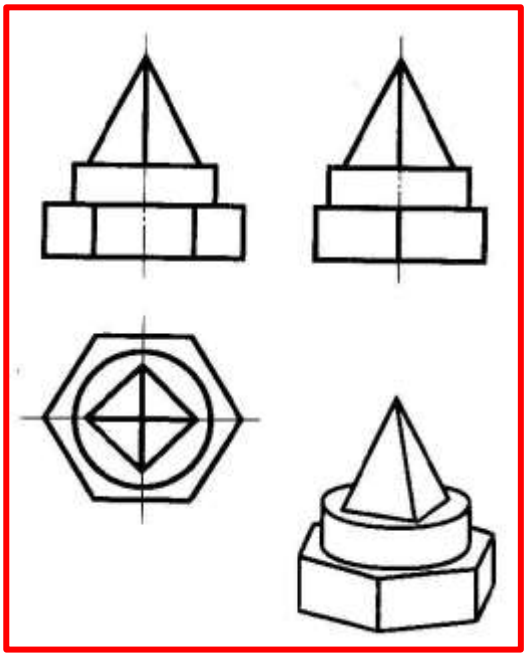
● Fig. 1 ● Fig. 2 ● Fig. 3 ● Fig. 4

3.6. In which figure does the line *l* lie in the plane?



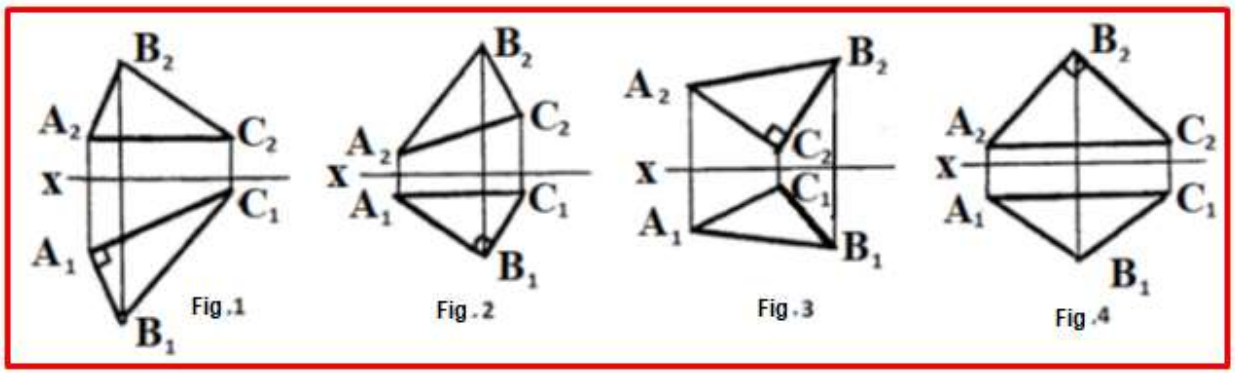
● Fig. 1 ● Fig. 2 ● Fig. 3 ● Fig. 4

3.7. How many faces of a geometric figure occupy a general position, perpendicular only to the horizontal plane of projections, parallel to the frontal plane of projections?



- 2
- 3
- 4
- 5

3.8. In which figure is side ΔABC the line with the highest (greatest) slope line?



- Fig. 1, side AB
- Fig. 2, side BC
- Fig. 3, side CB
- Fig. 4, side BC
- Fig. 2, side AB
- Fig. 4, side AB

Topic 4. Mutual position (location) of two planes, straight line and plane

Task № 20. Draw a plane β (h0β ∩ f0β) through point D that is parallel to the given plane α (h0α ∩ f0α), Fig. 48. To solve the task, use Fig. 49.

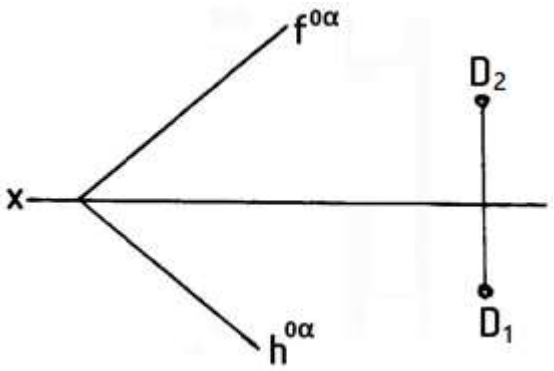


Fig. 48

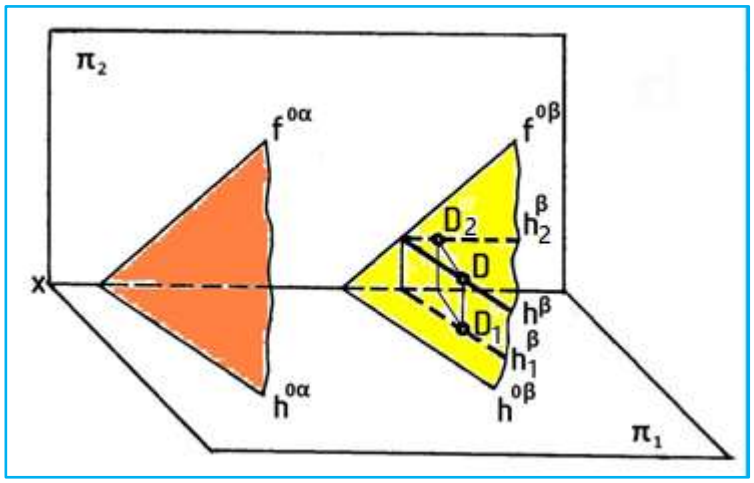


Fig. 49

Task № 21. Construct the line *12* of intersection of planes α ($h^{0\alpha} \cap f^{0\alpha}$) and β, Fig. 50. To solve the task, use Fig. 51.

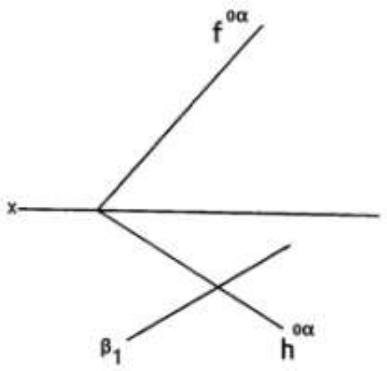


Fig. 50

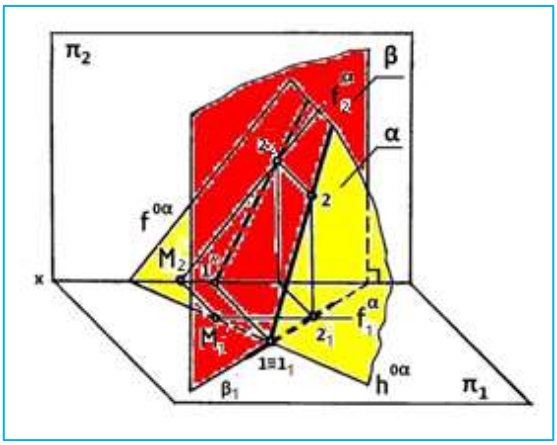


Fig. 51

Task № 22. Construct the line $h^{\alpha,\beta}$ of intersection of planes α ($h^{0\alpha} \cap f^{0\alpha}$) and β, Fig. 52. To solve the task, use Fig. 53.

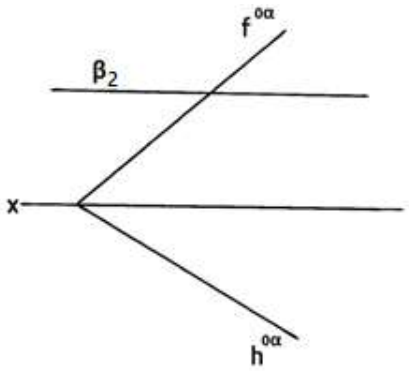


Fig. 52

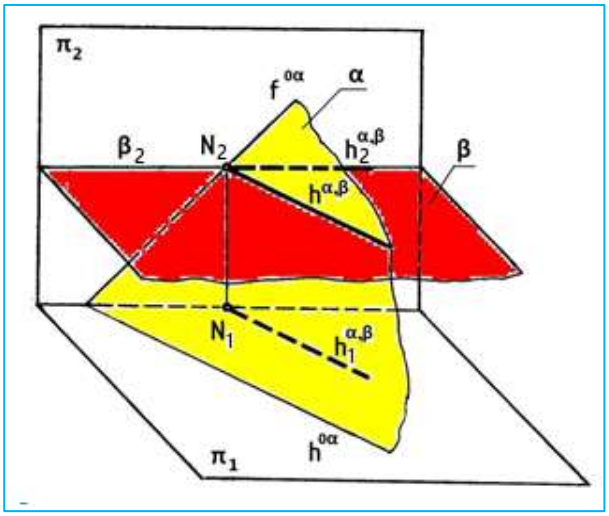


Fig. 53

Task № 23. Construct the point K of the intersection of the line *l* with the given plane α ($h^{0\alpha} \cap f^{0\alpha}$), Fig. 54. To solve the task, use Fig. 55.

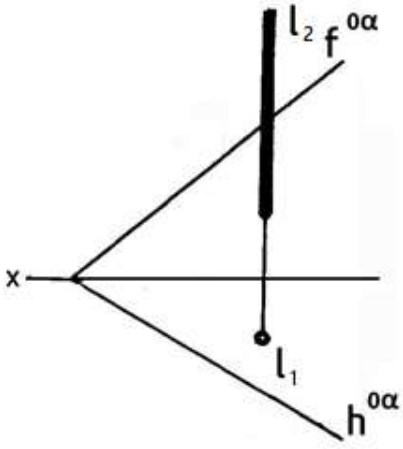


Fig. 54

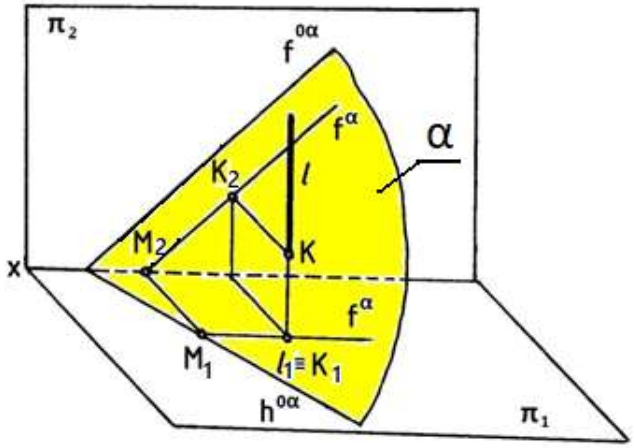


Fig. 55

Task № 24. Construct the point K of the intersection of the line *l* with the given plane β, Fig. 56. To solve the task, use Fig. 57.

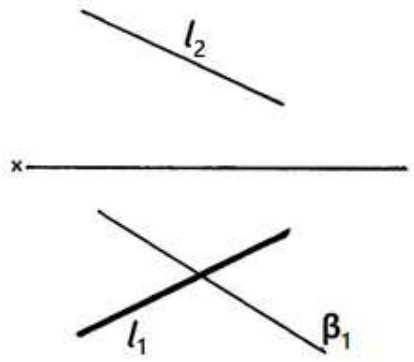


Fig. 56

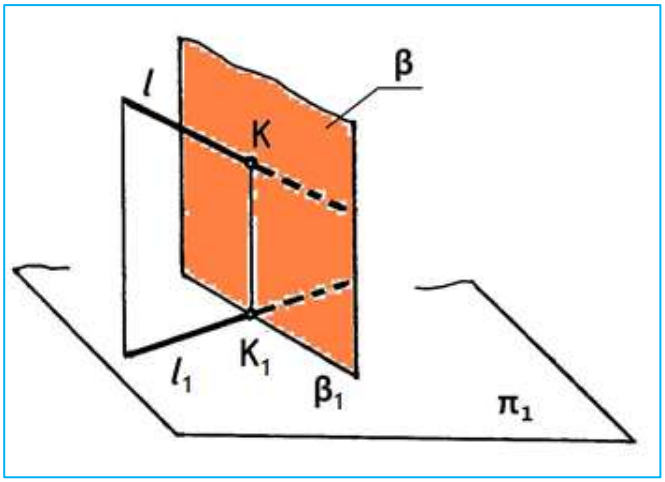


Fig. 57

Task № 25. Construct the point K of the intersection of the line *l* with the given plane α ($h^{0\alpha} \cap f^{0\alpha}$), Fig. 58. To solve the task, use Fig. 59.

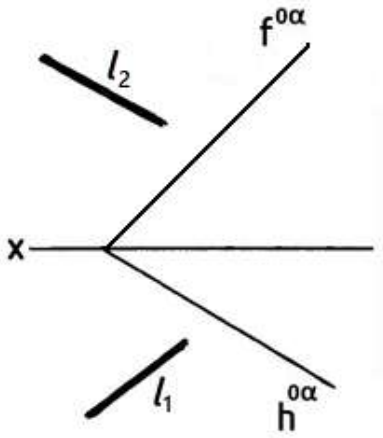


Fig. 58

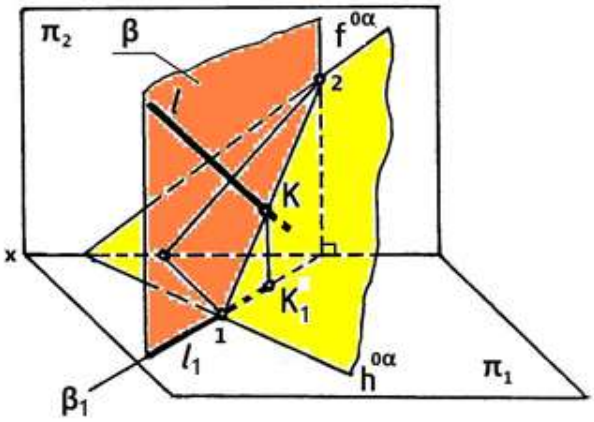


Fig. 59

Task № 26. Construct the point K of the intersection of the line *l* with the given plane α (ΔABC), Fig. 60. To solve the task, use Fig. 61.

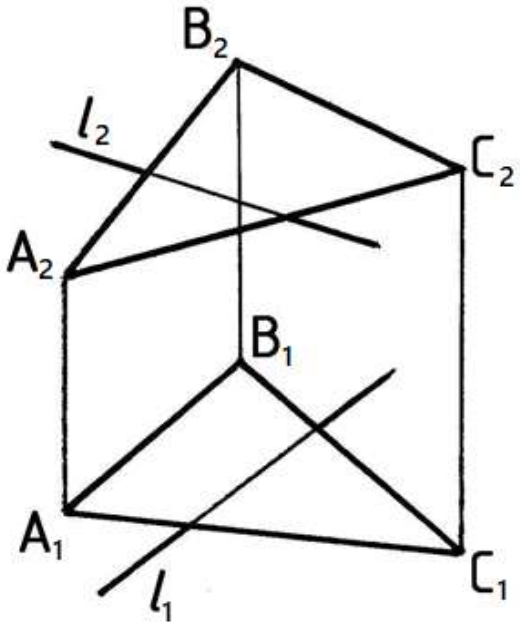


Fig. 60

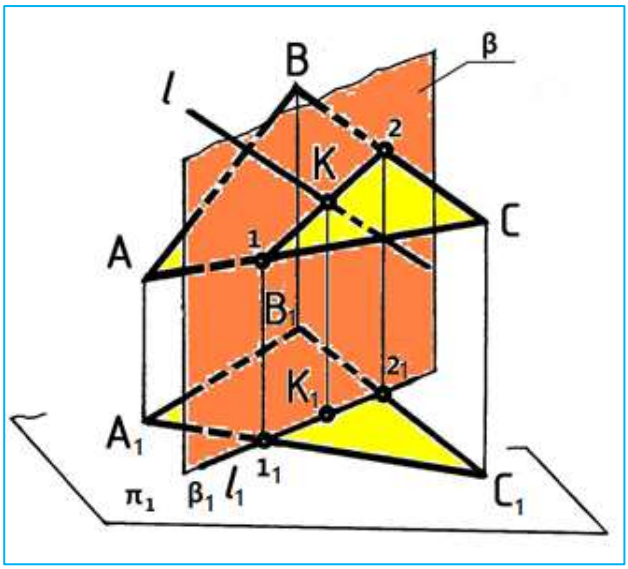


Fig. 61

Task № 27. Construct the line *12* of intersection of planes α ($h^{0\alpha} \cap f^{0\alpha}$) and β ($h^{0\beta} \cap f^{0\beta}$), Fig. 62. To solve the task, use Fig. 63.

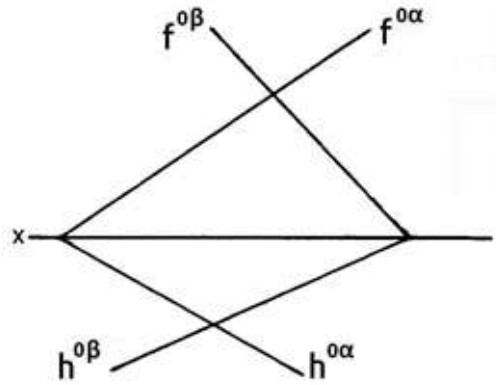


Fig. 62

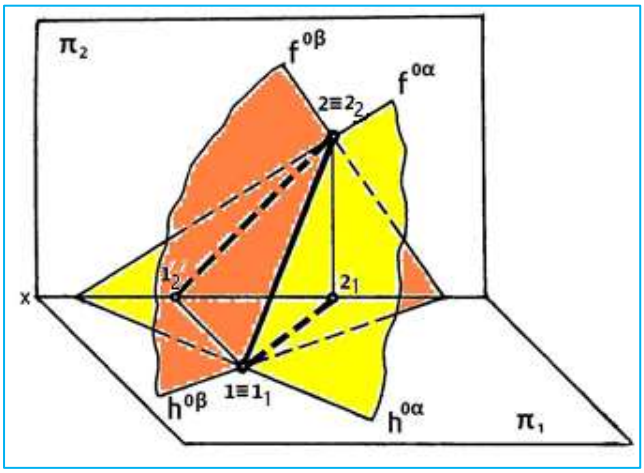


Fig. 63

Task № 28. Construct the line *12* of intersection of planes α ($h^{0\alpha} \cap f^{0\alpha}$) and β ($h^{0\beta} \cap f^{0\beta}$), Fig. 64. To solve the task, use Fig. 65.

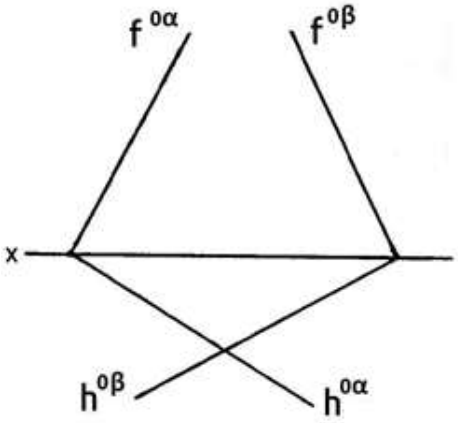


Fig. 64

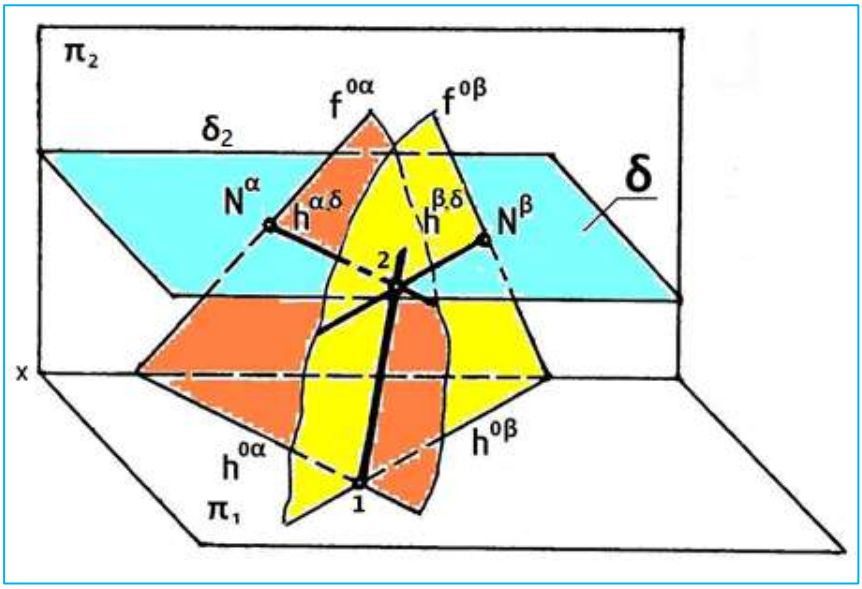


Fig. 65

Task № 29. Construct the line *12* of intersection of planes α ($h^{0\alpha} \cap f^{0\alpha}$) and β ($h^{0\beta} \cap f^{0\beta}$), Fig. 66. To solve the task, use Fig. 65, using two auxiliary planes.

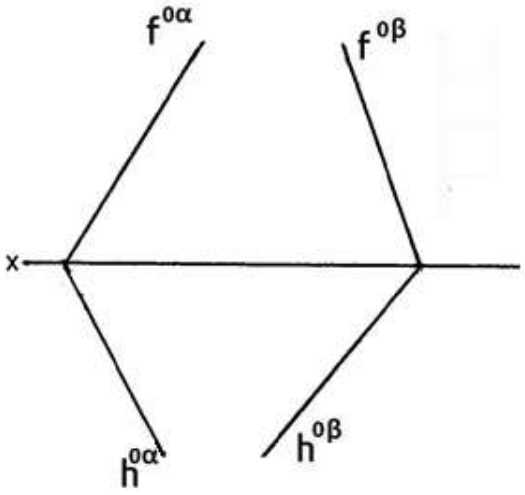


Fig. 66

Task № 30. Construct the line K^1K^2 of intersection of planes α ($h^{0\alpha} \cap f^{0\alpha}$) and β ($h^{0\beta} \cap f^{0\beta}$), Fig. 67. To solve the task, use Fig. 68.

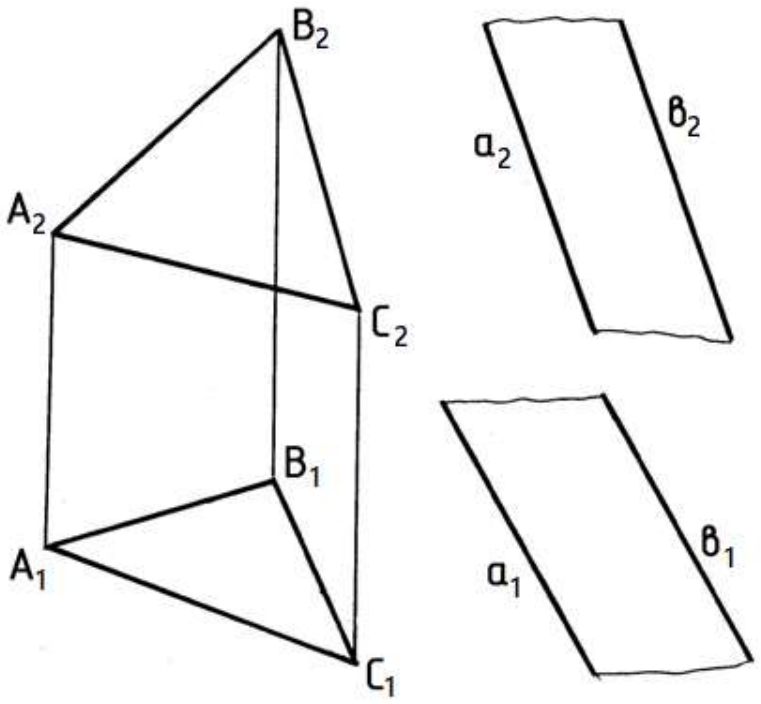


Fig. 67

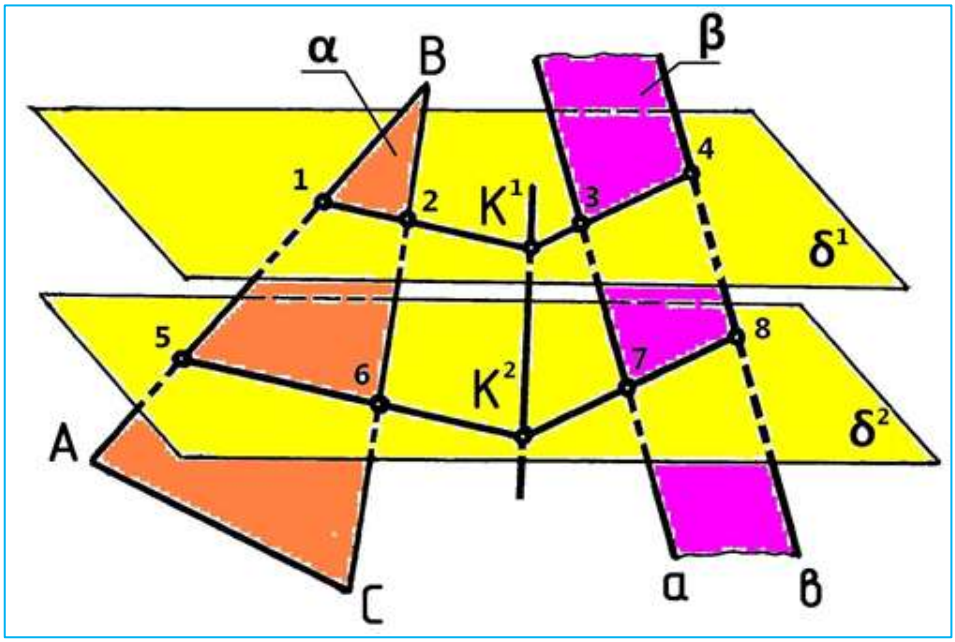


Fig. 68

Task № 31. Determine the distance from point A to plane α ($h^{0\alpha} \cap f^{0\alpha}$), Fig. 69, and to plane α ($h^{\alpha} \cap f^{\alpha}$), Fig. 70. To solve the task, use Fig. 71.

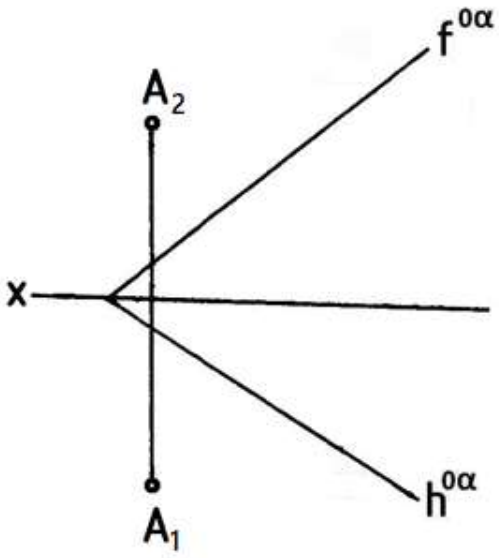


Fig. 69

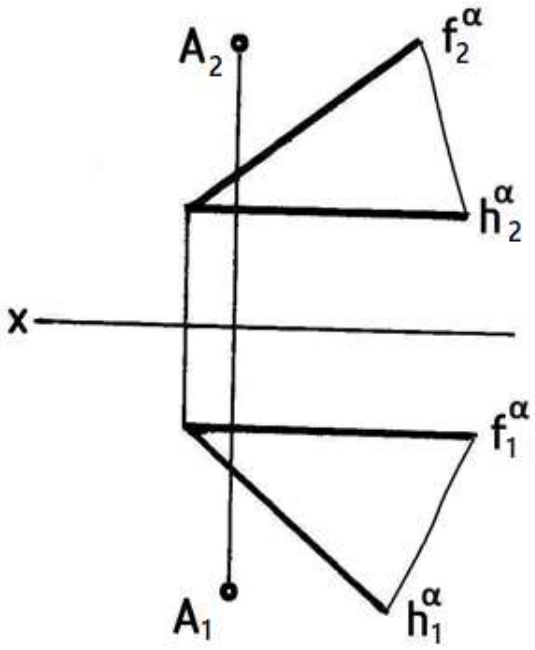


Fig. 70

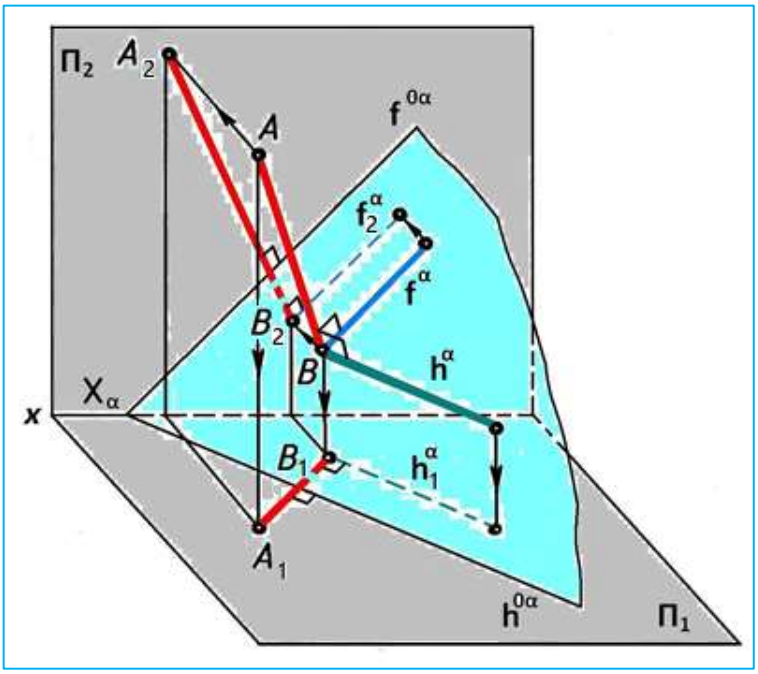


Fig. 71

Task № 32. Make building construction drawing according to the dimensions shown in Fig. 72 on a scale of 1 : 100. Add the missing lines to the top view.

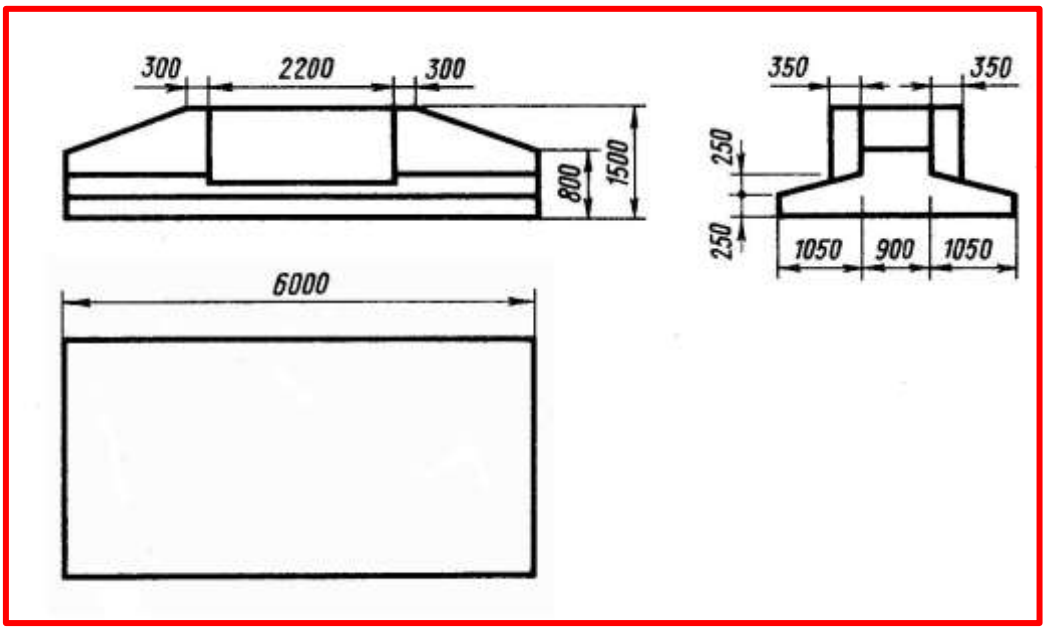
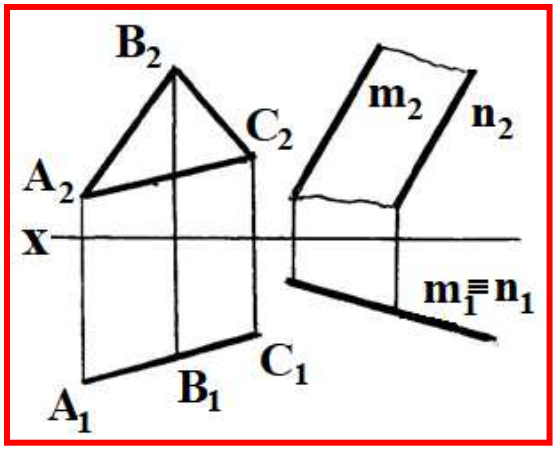


Fig. 72

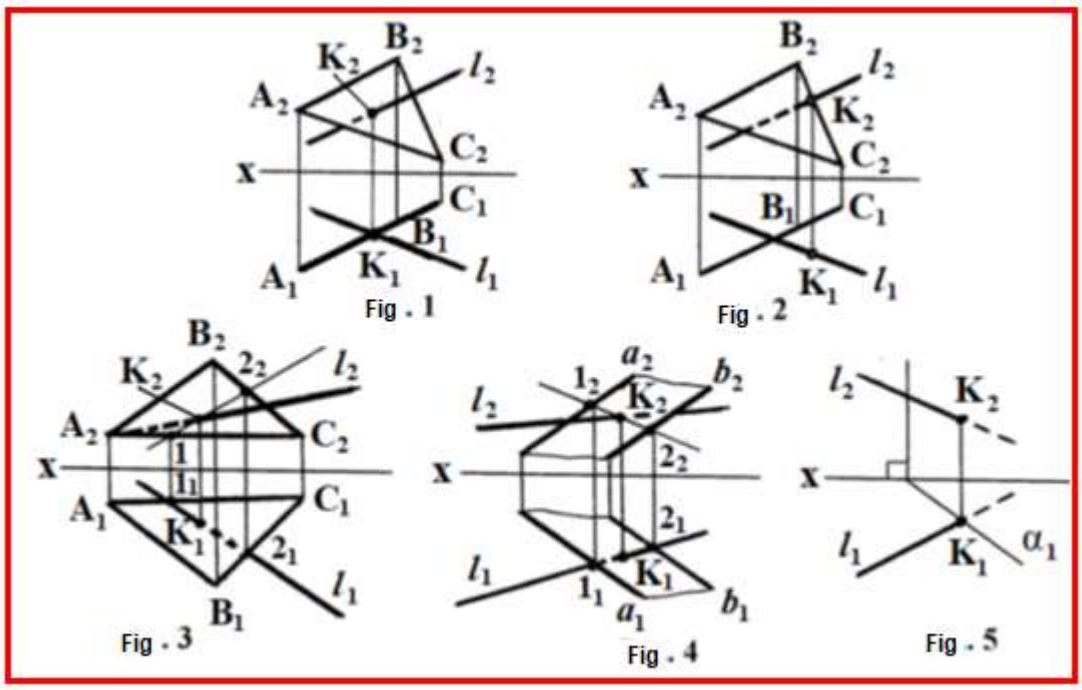
TEST TASKS FOR TOPIC 4 «MUTUAL POSITION (LOCATION) OF TWO PLANES, STRAIGHT LINE AND PLANE»

1. How straight line is the line of intersection of the two planes shown in the figure?



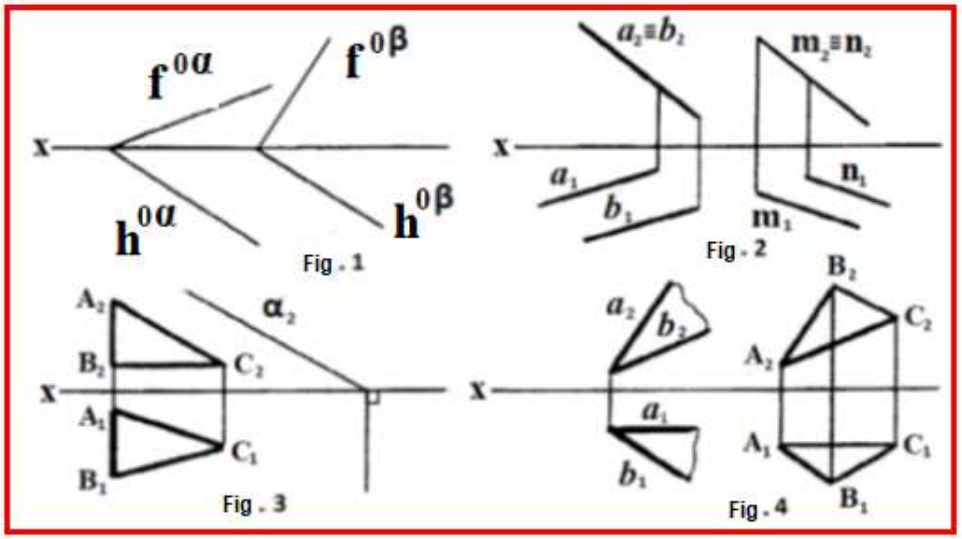
- Horizontal straight line
- Frontal straight line
- Horizontal and project straight line
- Fontal and project straight line
- Straight line of general position

2. In which figures is the intersection point K of line *l* with plane <u>incorrectly</u> determined?



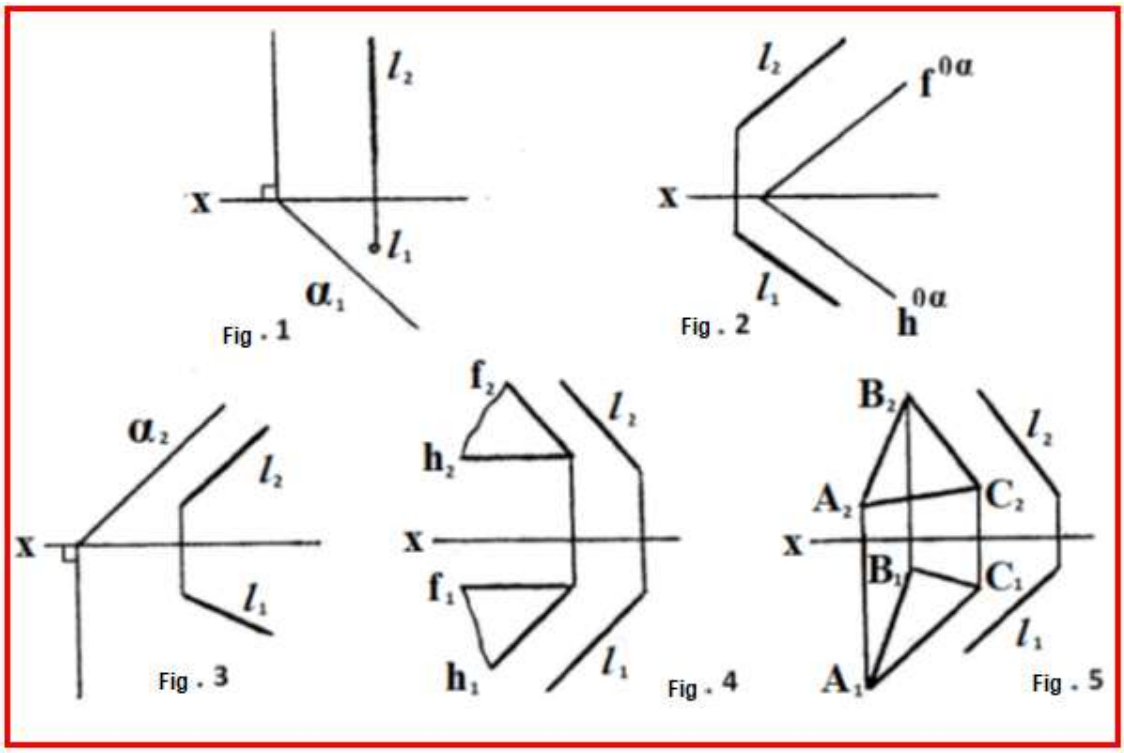
- Fig. 1
- Fig. 2
- Fig. 3
- Fig. 4
- Fig. 5

3. Which figure shows parallel planes?



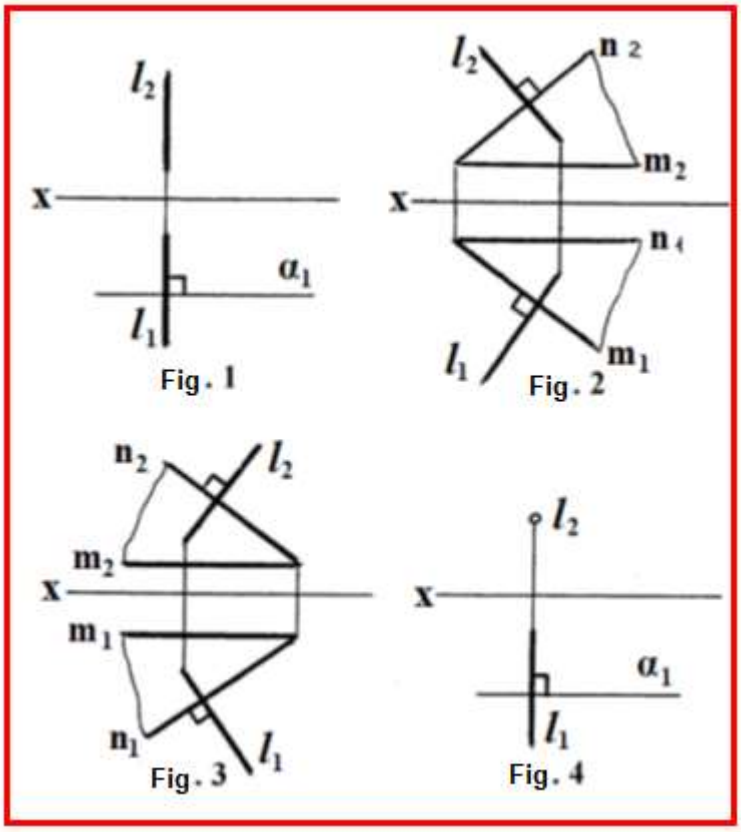
- Fig. 1
- Fig. 2
- Fig. 3
- Fig. 4
- Not depicted in any figure

4. In which figures is line *l* parallel to the given plane?



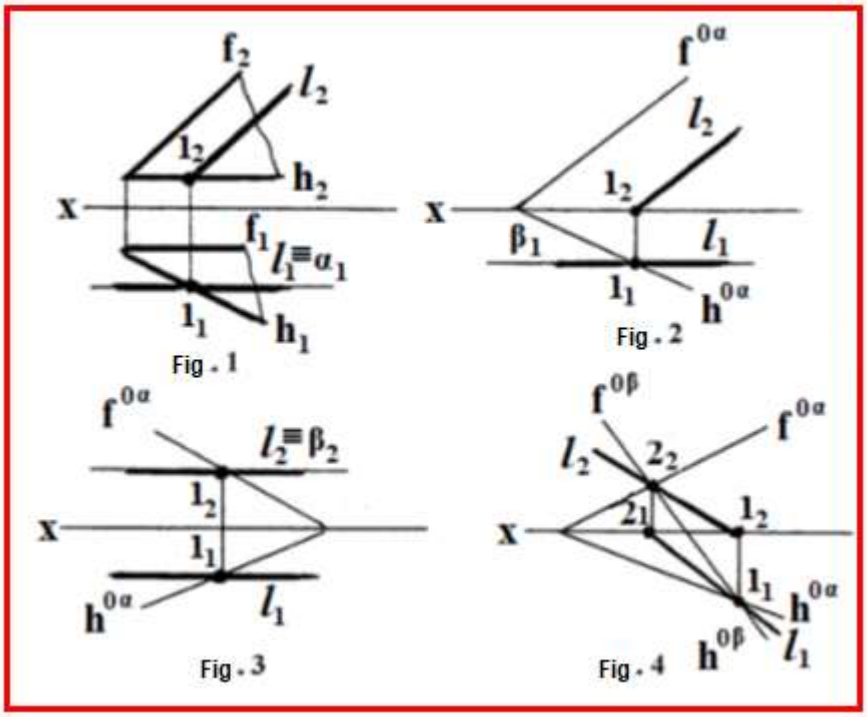
- Fig. 1, fig. 3
- Fig. 2, fig c. 4
- Fig. 2, fig. 5
- Fig. 4, fig. 5
- Not depicted in any figure

5. Which figures show line l perpendicular to the plane (the answer that contains all the shapes with a line perpendicular to the plane is counted) ? In which figures is line l parallel to the given plane?



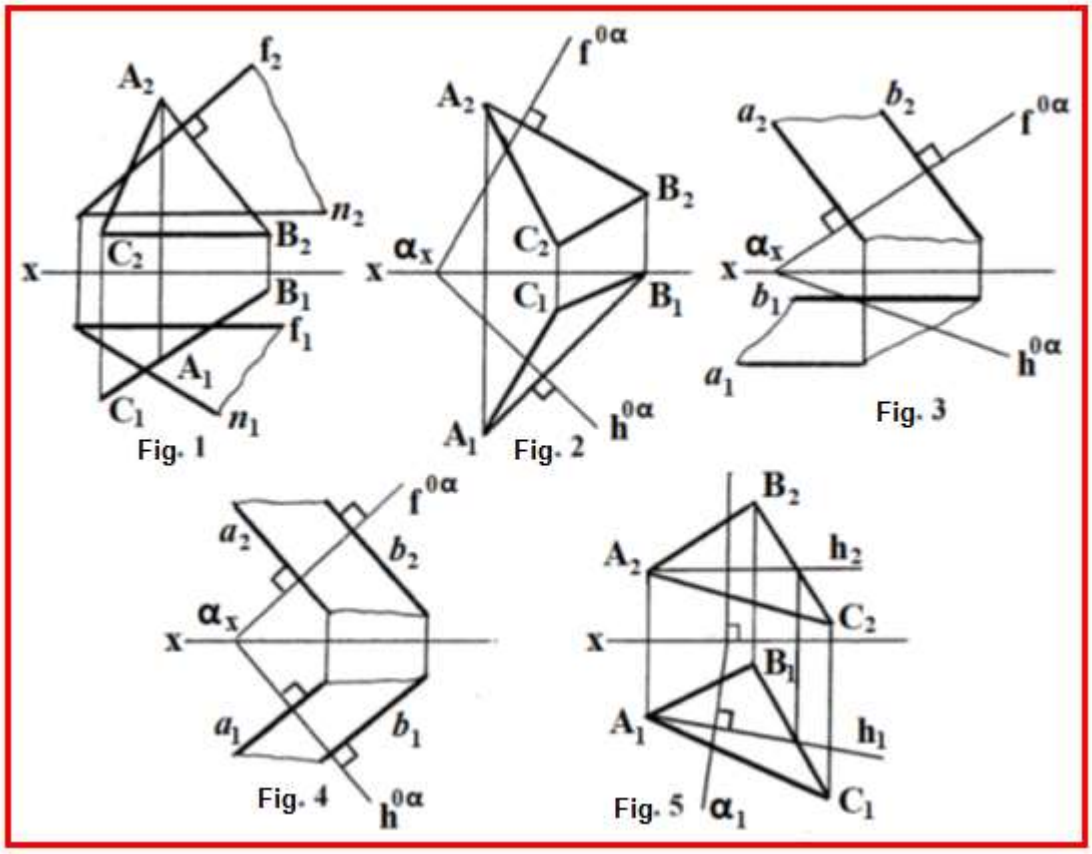
- Fig. 1, fig. 2
- Fig. 2, fig. 3
- Fig. 3, fig. 4
- Fig. 2, fig. 4

6. In which figures is the line of intersection *l* of two planes incorrectly constructed?



- Fig. 1
- Fig. 2
- Fig. 3
- Fig. 4
- Not depicted in any figure

7. Which figures show mutually perpendicular planes (the answer containing all figures with perpendicular planes is correct)?



- Fig. 1, fig. 2, fig. 3
- Fig. 2, fig. 4, fig. 5
- Fig. 2, fig. 3, fig. 4
- Fig. 1, fig. 4, fig. 5
- Fig. 1, fig. 3, fig. 4

Topic 5. Surfaces

Task № 33. Construct the missing horizontal projections of points belonging to surfaces (Figs. 73, 75, 77, 79, 81). Construct the missing frontal projections of points belonging to surfaces (Figs. 74, 76, 78, 80, 82). In Fig. 83, find the missing projections of points 2 and 3 using the parallels of the surface, and in Fig. 84 - using the generatrices. In Figs. 85 and 87, determine the missing projection of point 2 using the parallel and generatrix, respectively.

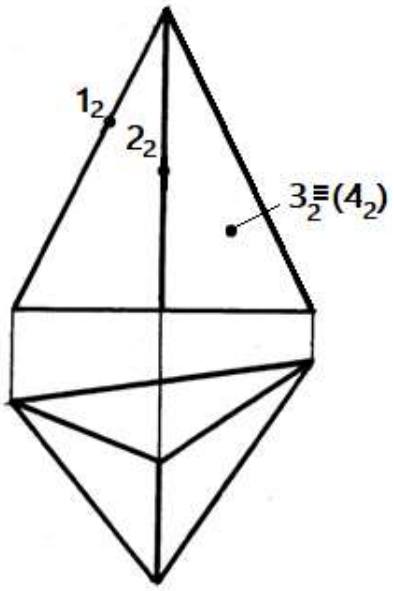


Fig. 73

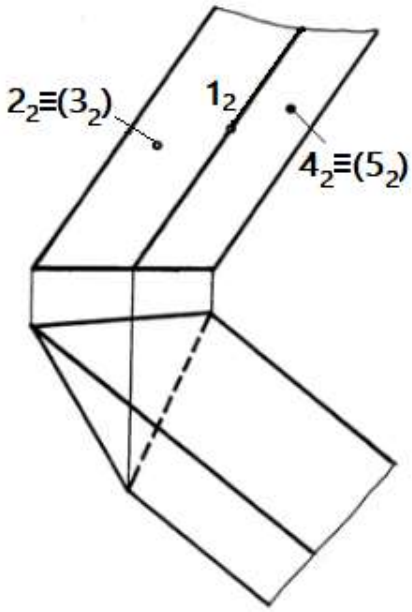


Fig. 74

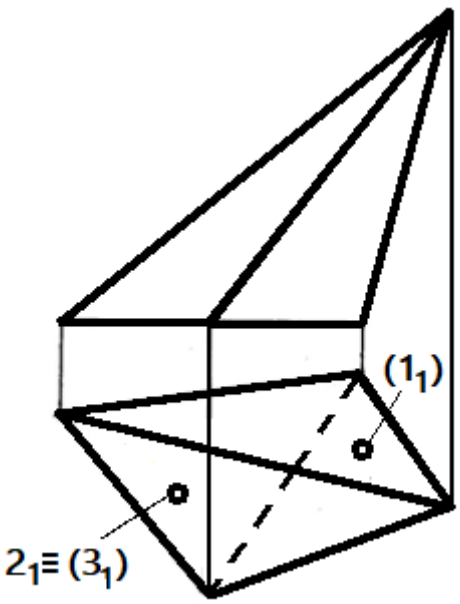


Fig. 75

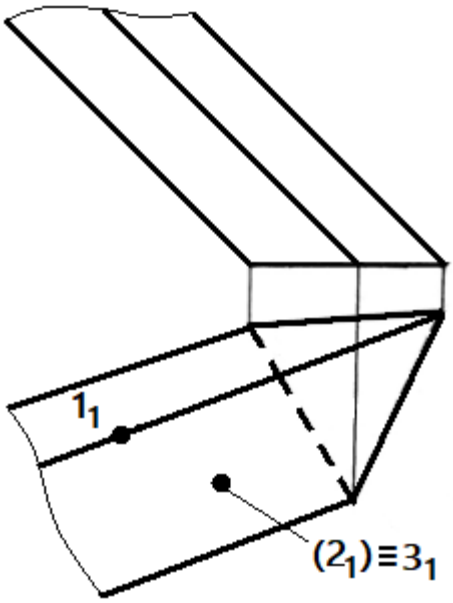


Fig. 76

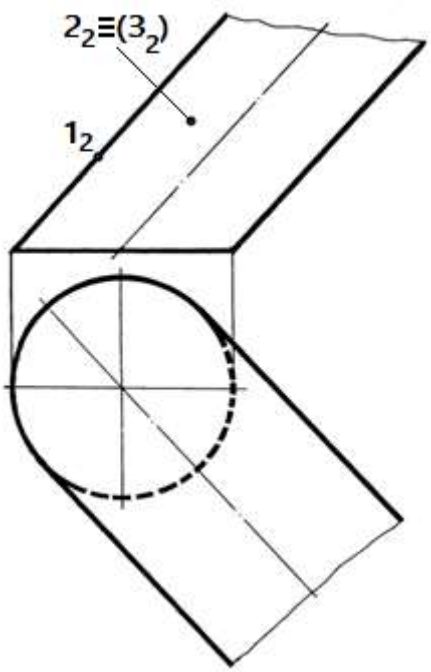


Fig. 77

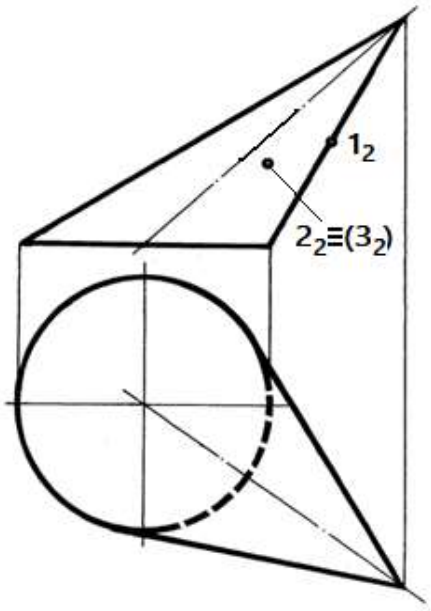


Fig. 78

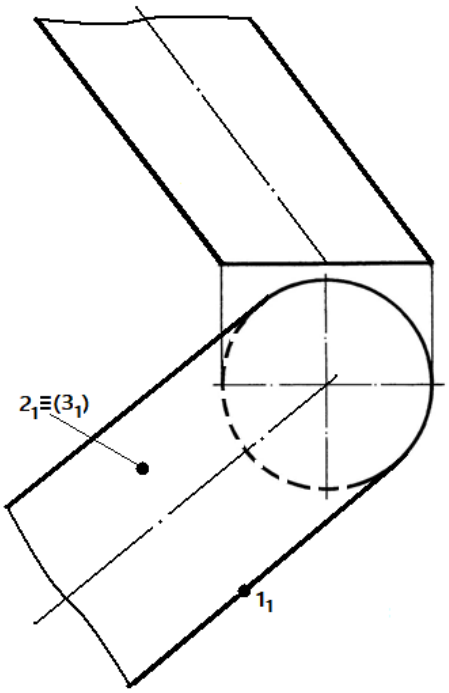


Fig. 79

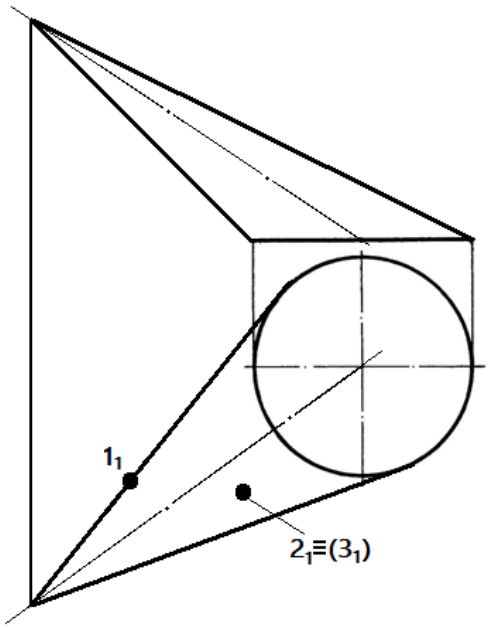


Fig. 80

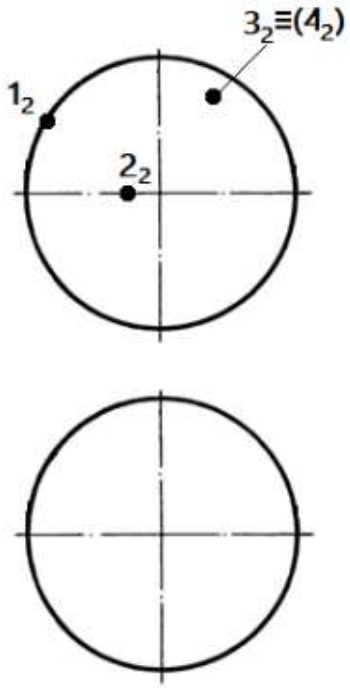


Fig. 81

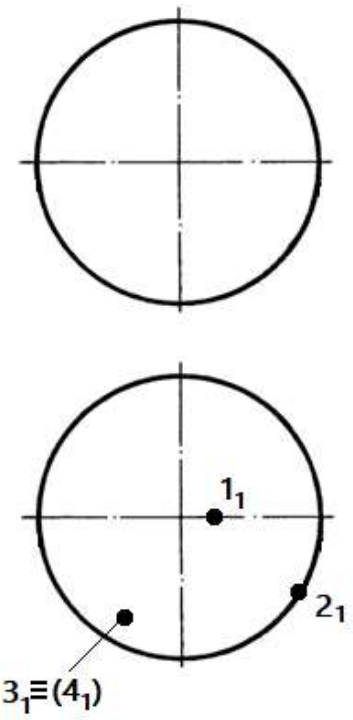


Fig. 82

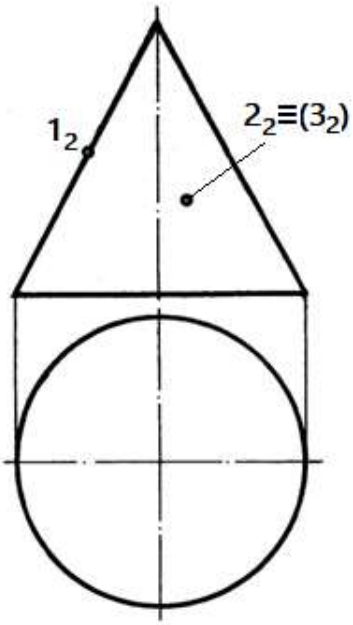


Fig. 83

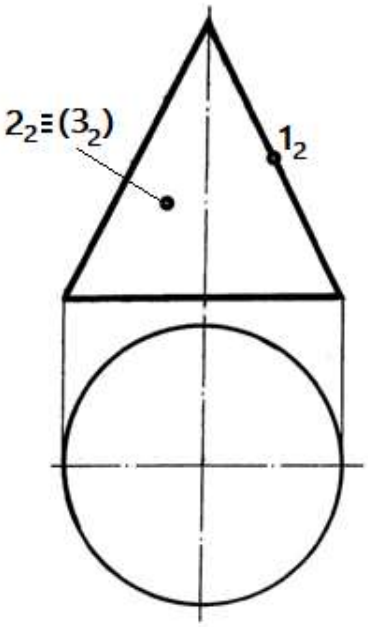


Fig. 84

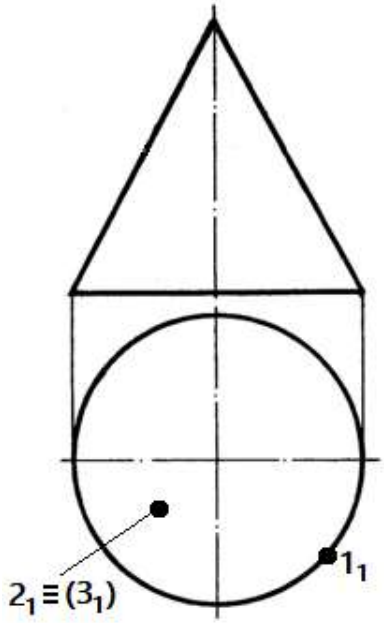


Fig. 85

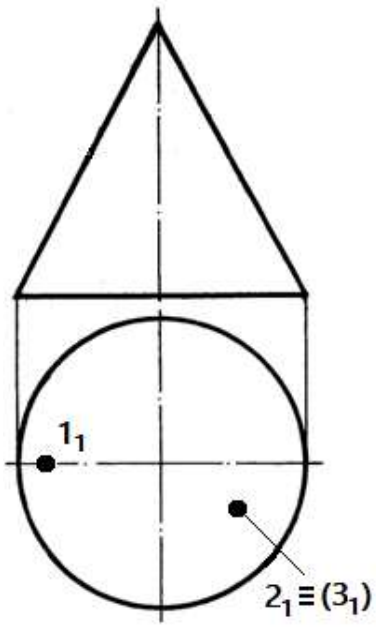
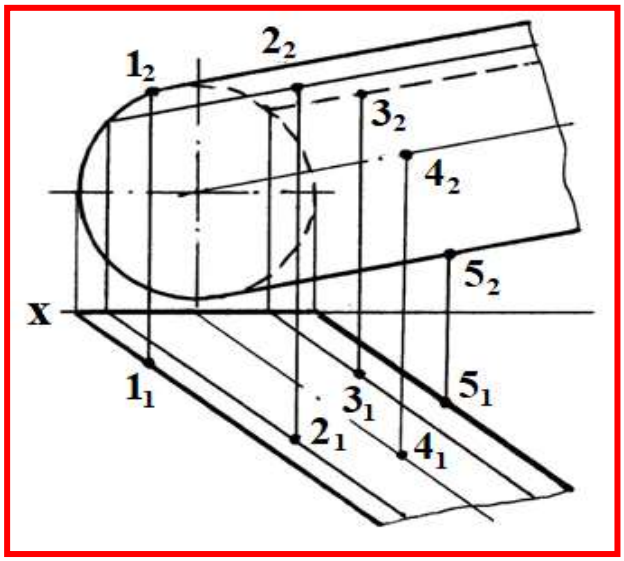


Fig. 86

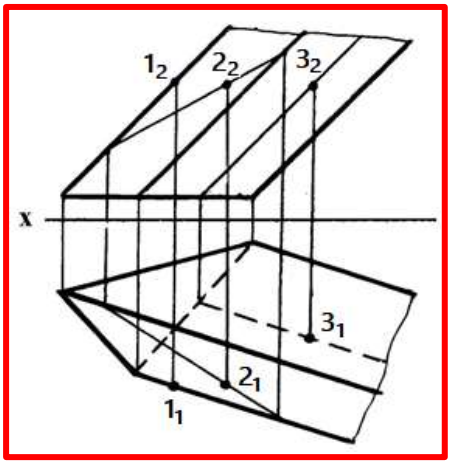
TEST TASKS FOR TOPIC 5 «SURFACES»

1. Which of the points belong to the surface of the cylinder (the answer that contains all the points belonging to the surface is counted)?



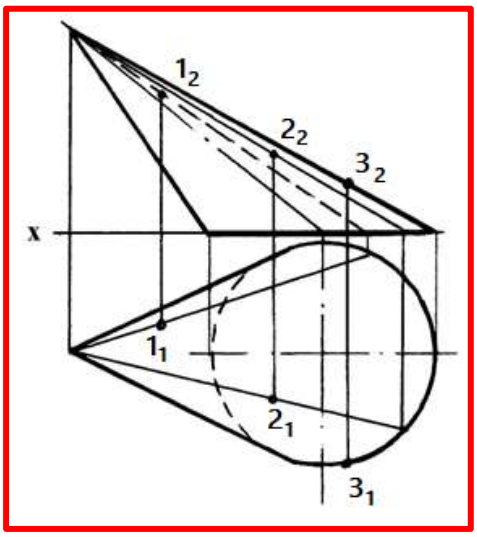
- 1, 2
- 2, 3
- 3. 4
- 4, 5

2. Which of the points belong to the surface of the polygon (the answer that contains all the points belonging to the surface is counted)?



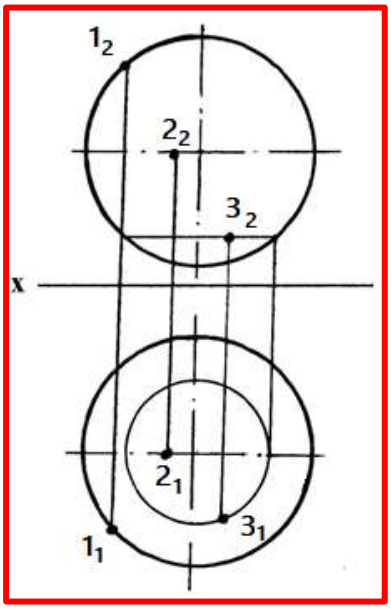
- 1, 2
- 1, 3
- 2, 3
- Not depicted in any figure
- All belong

3. Which of the points belong to the surface of the cone (the answer that contains all the points belonging to the surface is counted)?



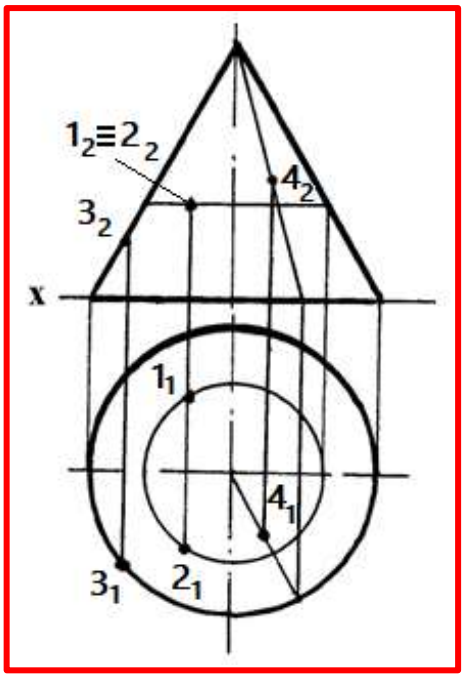
- 1, 2
- 1, 3
- 2, 3
- Not depicted in any figure
- All belong

4. Which of the points belong to the surface of the globe (the sphere)?



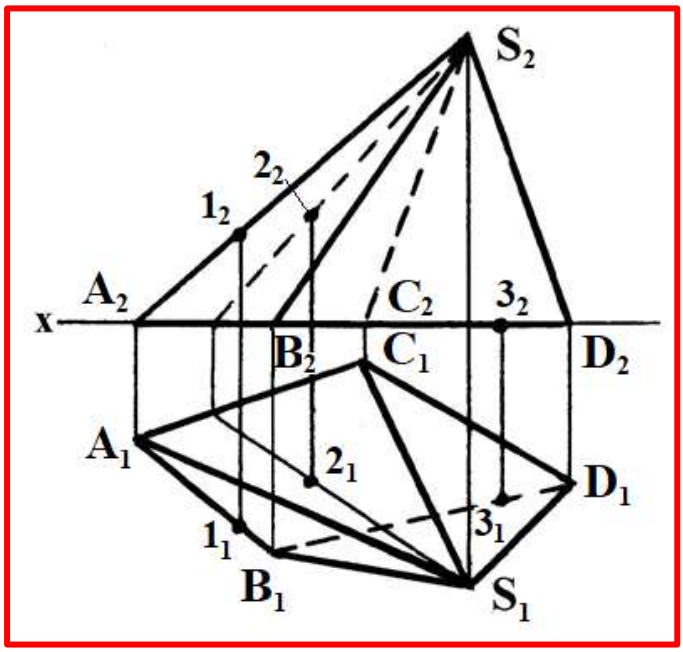
- 1
- 2
- 3
- Not depicted in any figure
- All belong

5. Which of the points belong to the surface of the cone?



- 1
- 2
- 3
- 4
- Not depicted in any figure
- All belong

6. Which of the points belong to the surface of the polygon (the answer that contains all the points belonging to the surface is counted)?



- 1, 2
- 1, 3
- 2, 3
- Not depicted in any figure
- All belong

Topic 6. Intersection of a surface by a projecting plane

Task № 34. Construct a line of intersection of the surface of a geometric body with the projecting plane β (Fig. 87 - Fig. 98).

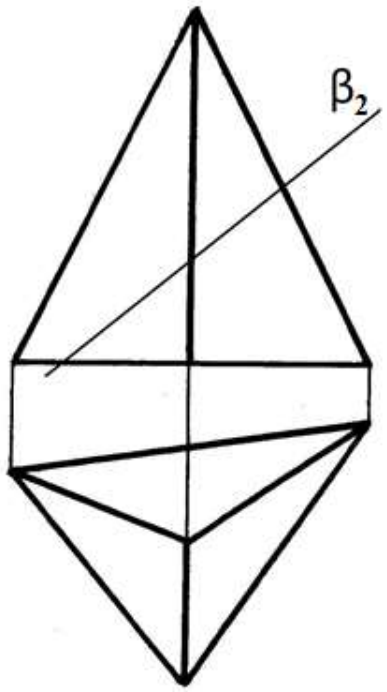


Fig. 87

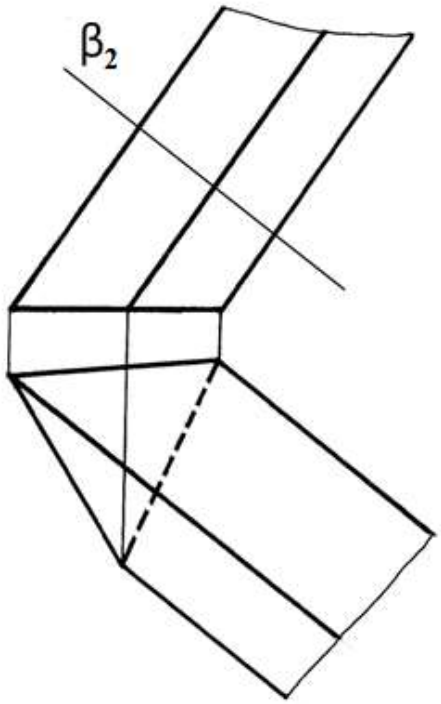


Fig. 88

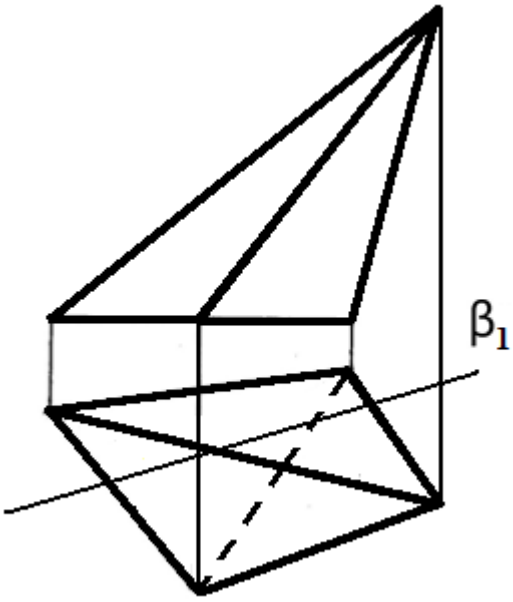


Fig. 89

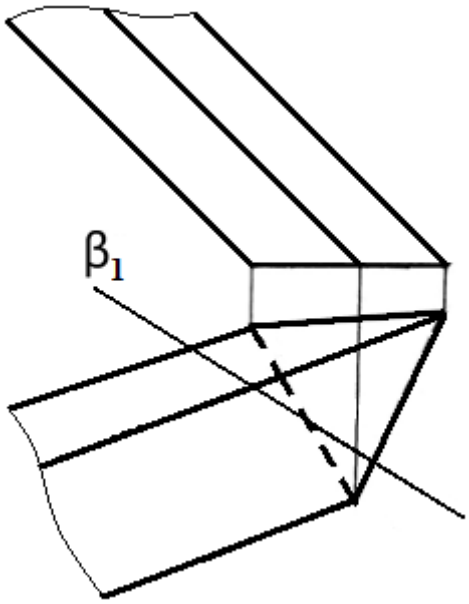


Fig. 90

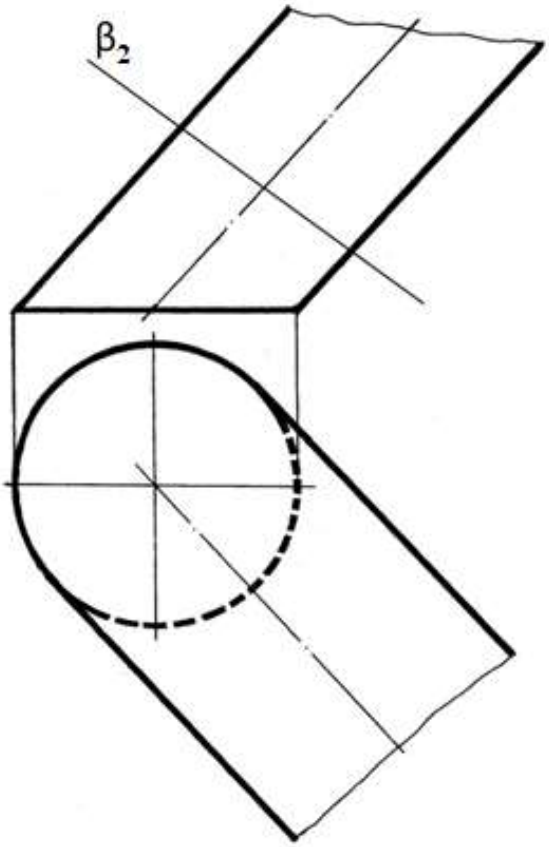


Fig. 91

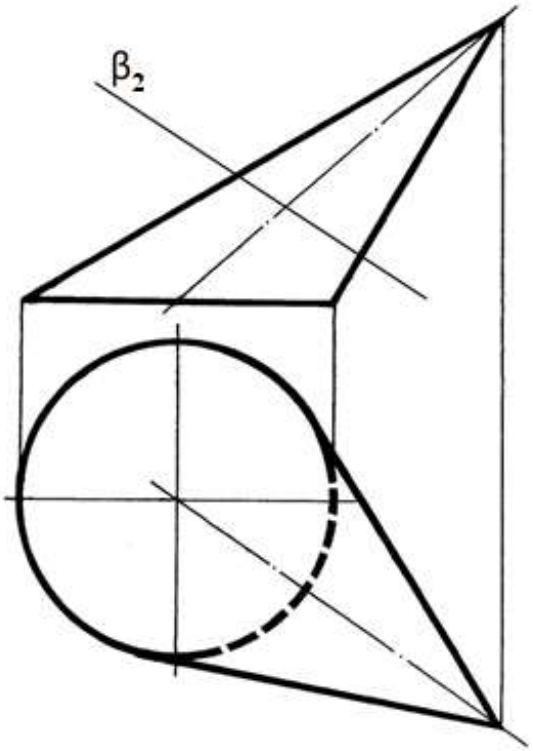


Fig. 92

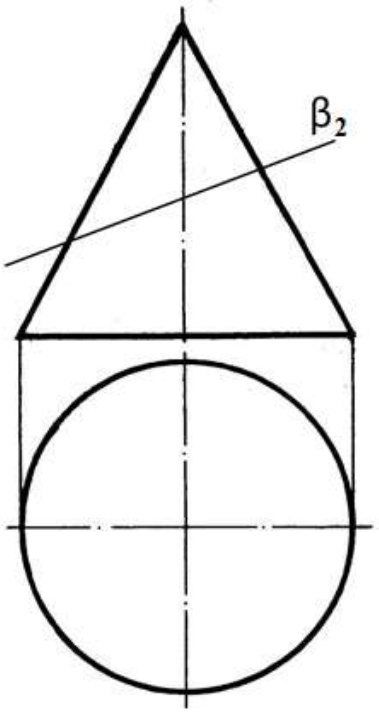


Fig. 93

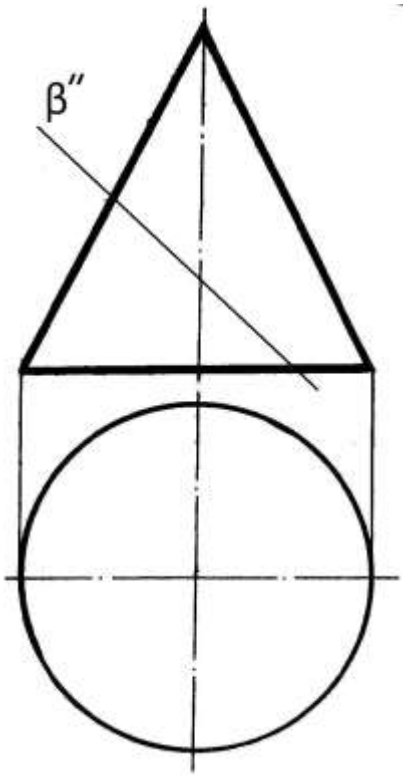


Fig. 94

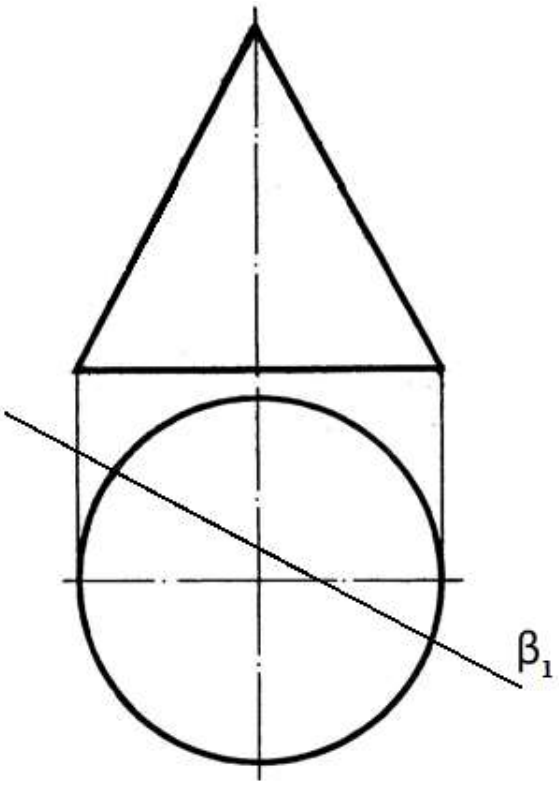


Fig. 95

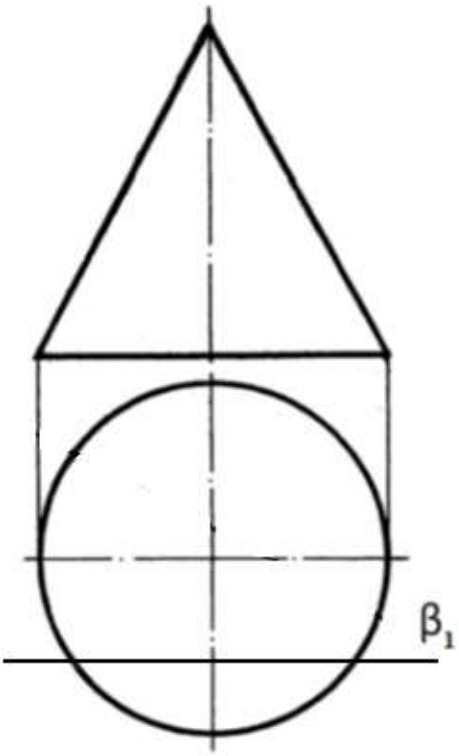


Fig. 96

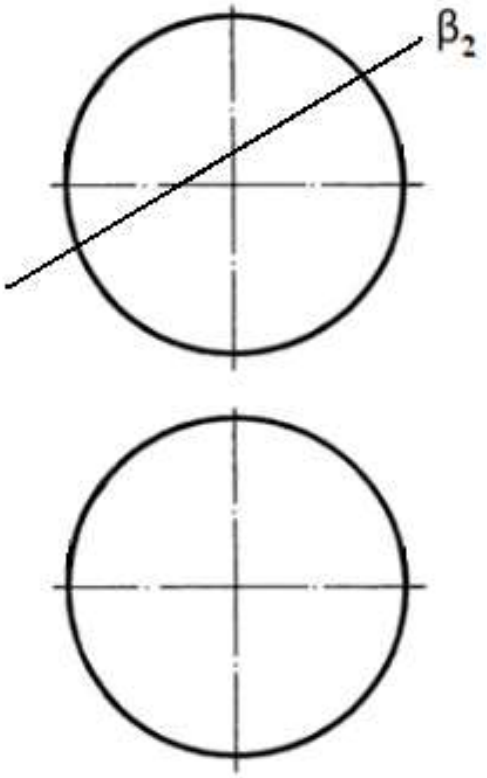


Fig. 97

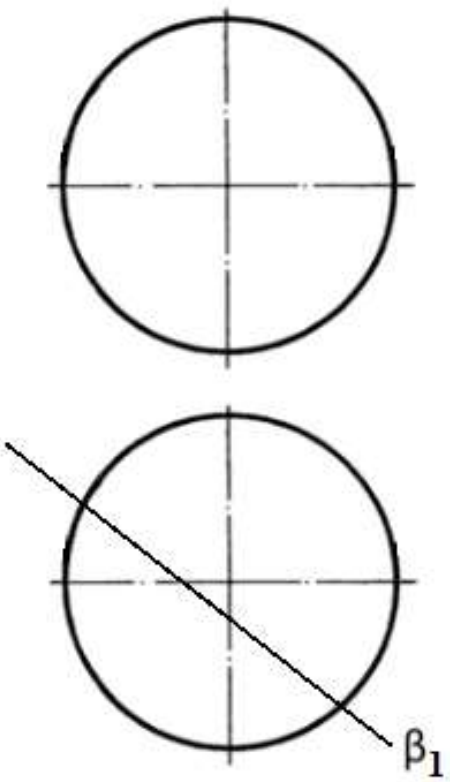
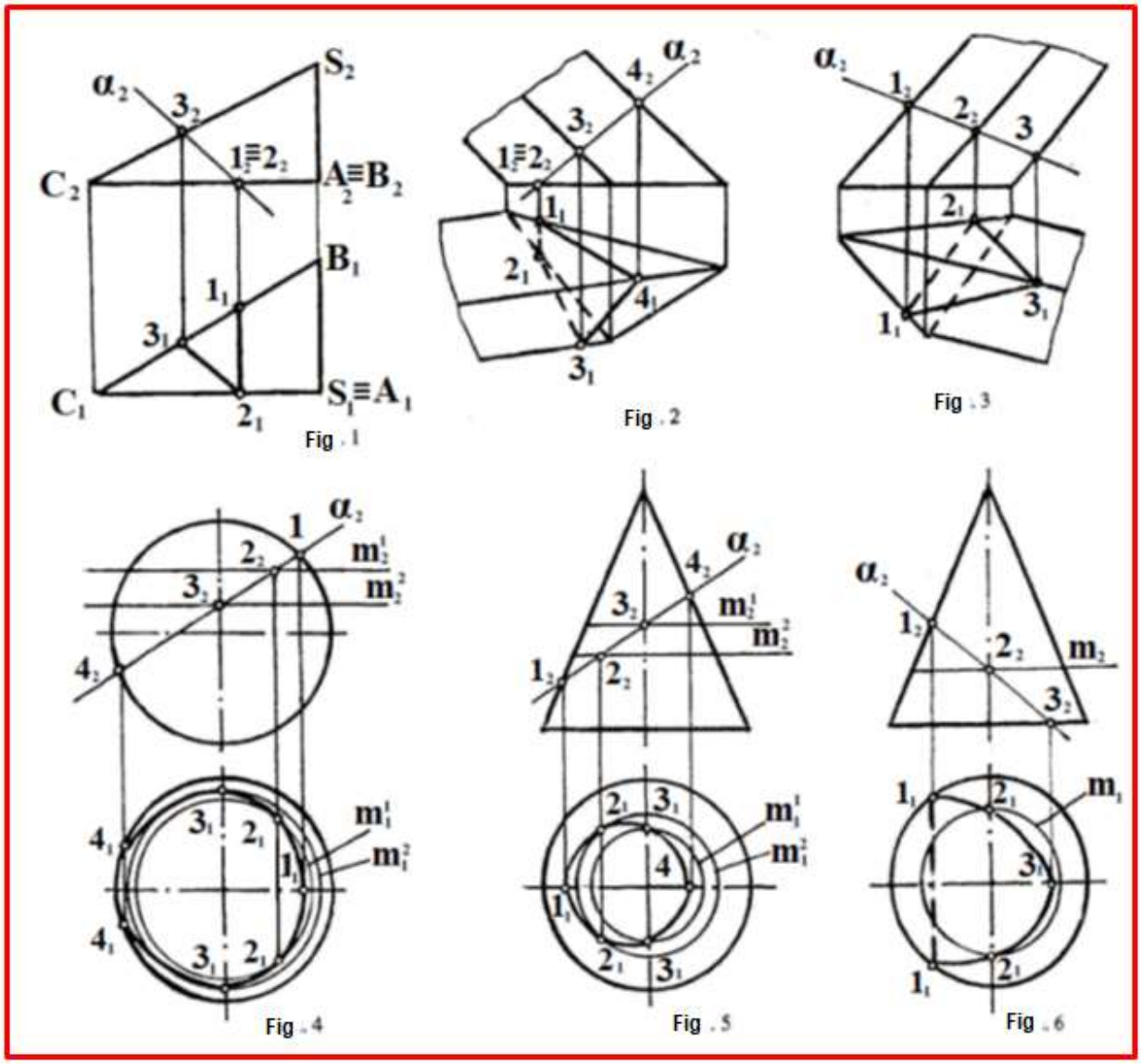


Fig. 98

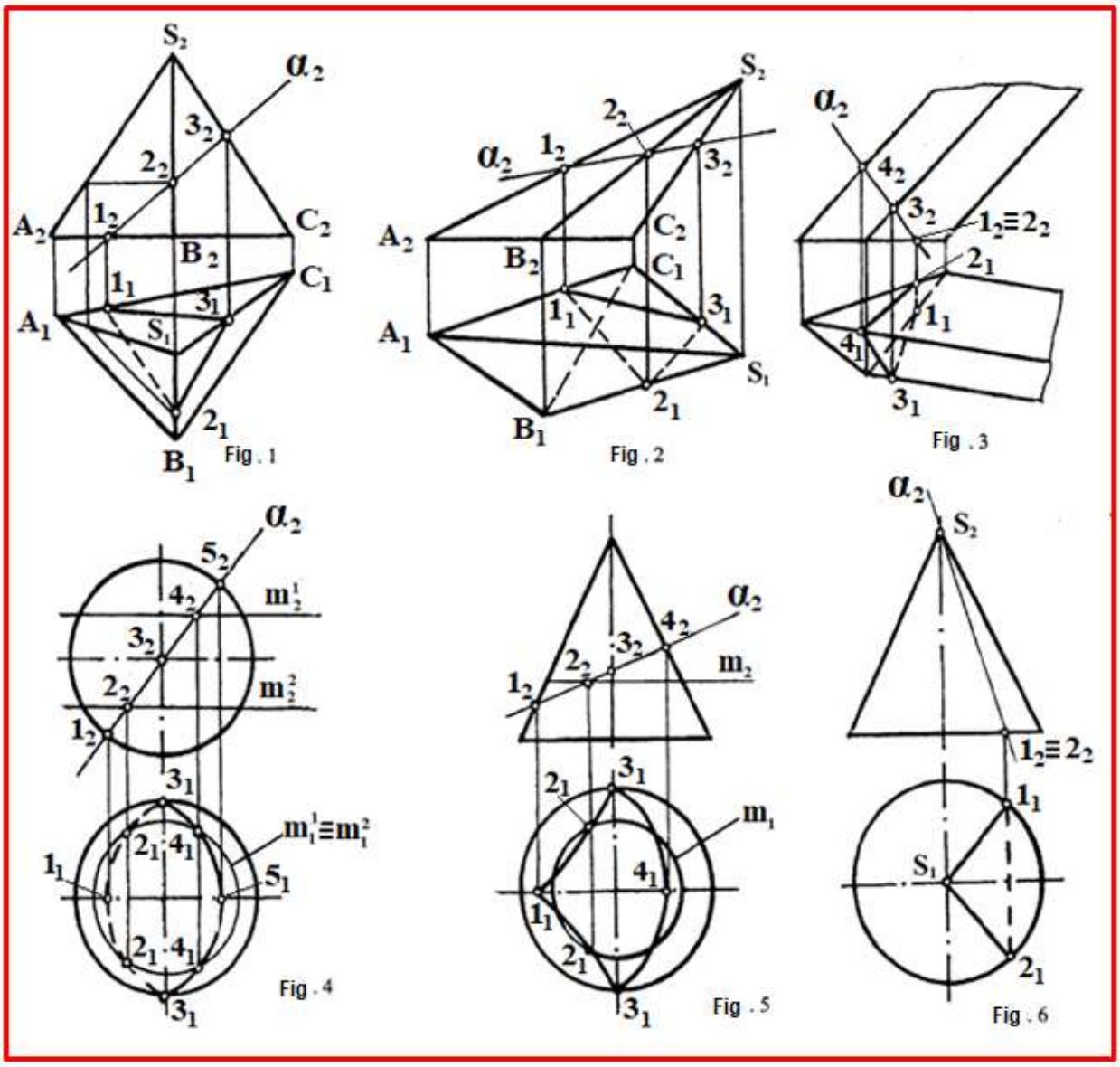
TEST TASKS FOR TOPIC 6 « INTERSECTION OF A SURFACE BY A PROJECTING PLANE»

1. In which figures is the line of intersection of the body surface with the projecting plane α correctly constructed?



- Fig.1, fig. 3
- Fig. 4, fig. 6
- Fig. 2, fig. 5
- Fig. 1, fig. 4
- Fig. 3, fig. 6

2. In which figures is the line of intersection of the body surface with the plane α correctly constructed (the answer that contains all figures with a correctly constructed line of intersection is counted)?



- Fig.1, fig. 3, fig. 4, fig. 6
- Fig. 3, fig. 4, fig. 5, fig. 6
- Fig. 2. fig. 4, fig. 5 fig. 6
- Fig. 2, fig. 3, fig. 4, fig. 5
- Fig. 1, fig. 2, fig. 4, fig. 5

Topic 7. Mutual intersection of surfaces

Task № 35. Construct the line of intersection of the surfaces of two bodies (Fig. 99, Fig. 100). Construct the development of the surface of a right circular cone with the line of intersection on it.

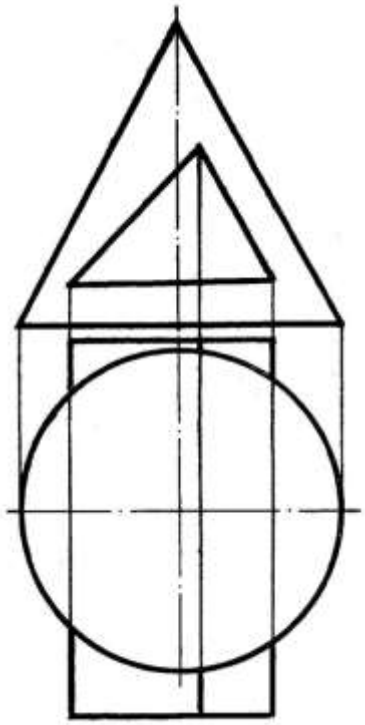


Fig. 99

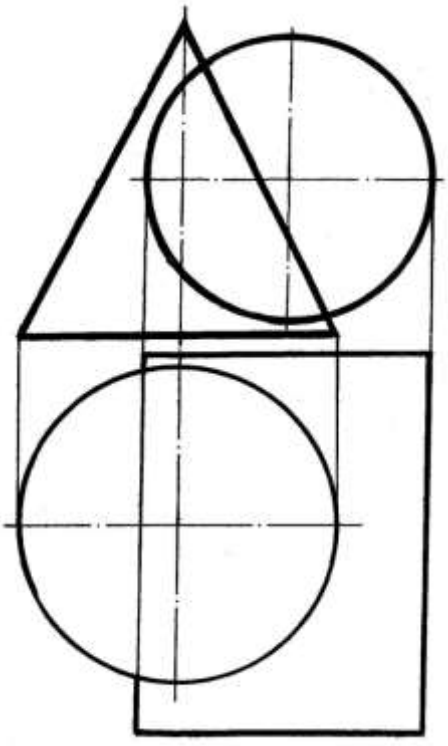
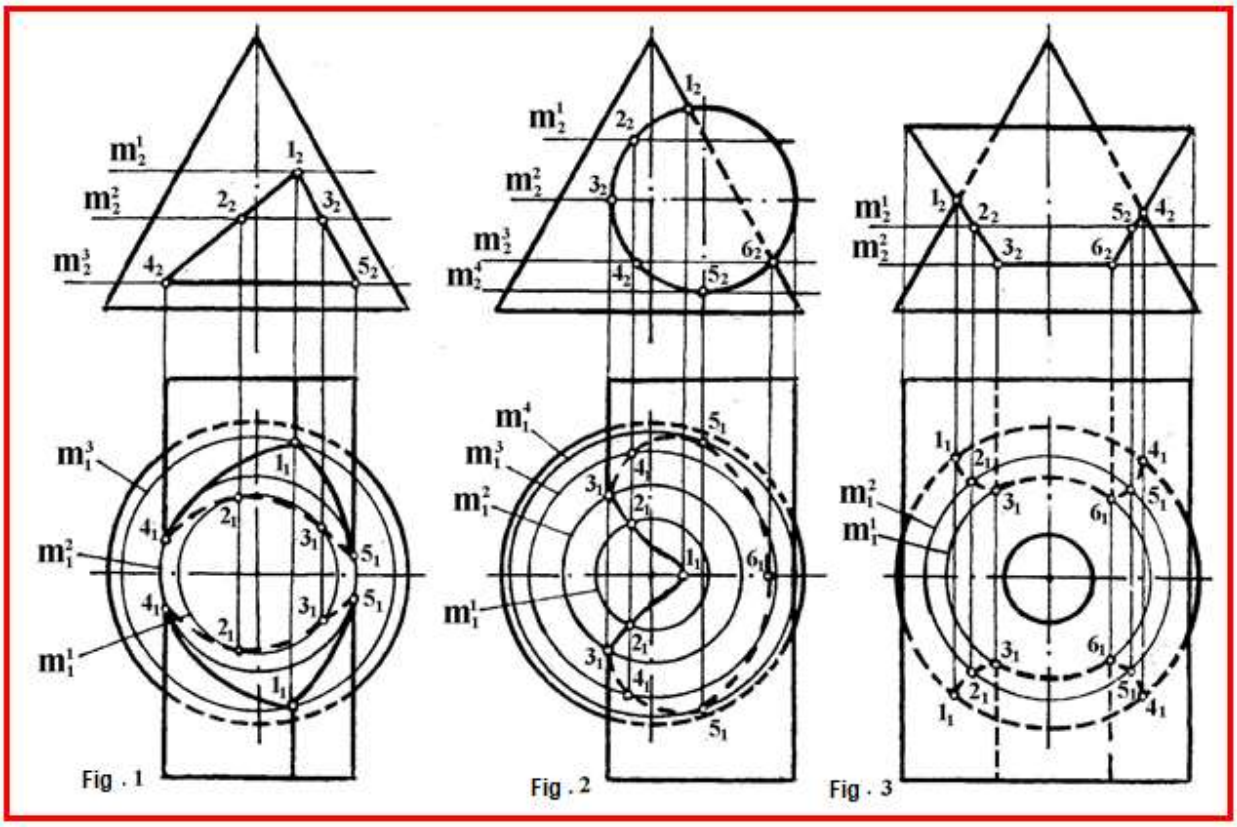


Fig.100

TEST TASKS FOR TOPIC 7 « MUTUAL INTERSECTION OF SURFACES»

1. In which figure is the line of intersection of the surfaces of two bodies correctly constructed?

2. In which figure is the incomplete and complete intersection of the surfaces shown?



- Fig. 1
- Fig. 2
- Fig. 3