

ACKNOWLEDGE ACQUISITION ACROSS THE ACTIVITIES OF STUDENTS BY MAKING A SPECIAL IMAGE AND SETTING POSITIVE AND METRICAL ISSUES

Turayev Khumoyiddin Abdugafforovich

Senior lecturer of Termiz State University

Turayev Olimjon Suvanovich

Lecturer at Termiz State University

Abduraximov Lola Xursanovich

Lecturer at Termiz State University

DISCUSSION

In the case of a more accurate picture of an object than orthogonal projections, it does not need to be drawn from a more accurate, but slightly more difficult, perspective. This type of projection is easy to use, with simplicity and simplicity.

Drawing a circle image in axonometry. In axonometry, a circle can be made in several ways.

They are chosen based on the specific context of the issue.

The eight-point method (Figure 1). Matching is like making an orthogonal projection or making shadows from a circle. A circle is made of square axonometers whose sides and sides are parallel to the axes of axonometry; 1'3' and 2'4' center lines marking the four points of the circle.[1]

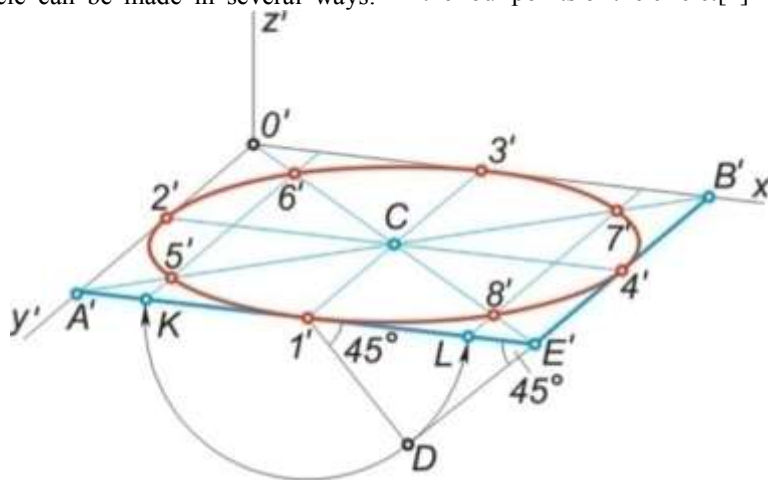


Figure 1

Then half of the square (whatever) is dividing by 0.707; The points L and K are drawn parallel to the other sides of the square, and their intersections with the square diagonals give four more points 5', 6', 7', 8' in the circle. It should be noted that his arrows do not overlap with any straight line in the making.

Sibling matching method (Figure 2). Determine the large axis AB of the ellipse in place of the axonometric of the circumference diameter and find one more, for example, E, the axis on the big axis, the sister points E and ye0, and Using the semiconductor, the whole ellipse is completed by symmetry. [3]

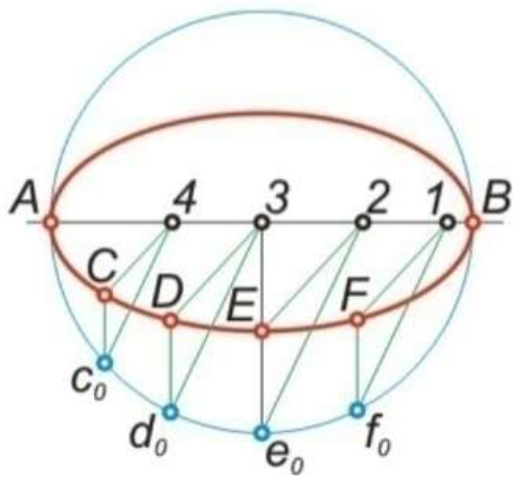


Figure 2

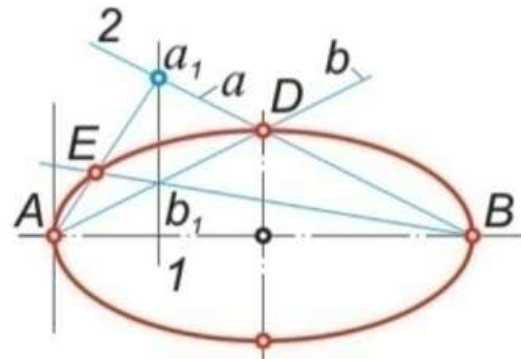


Figure 3

Projective beam method (Figure 3). Two ellipses AD and BD are drawn, which are projections of a and b, knowing that the three ellipses of the ellipse are defined, and knowing the direction of the attempts at points A and B. Point A and B are the center of the beams a and b respectively. 12 lines are drawn through the line, and intersections with lines a1 and b1 are defined. The intersection points of the

beam Aa1 and Bb1 determine the E point to which the ellipse belongs. The same thing is repeated several times.

Circulars in parallel planes parallel to the coordinate planes are represented by rectangular isometry and dimetry, in the form of ellipse shapes. Their positions and sizes are shown in Figure 4 and Figure 5.

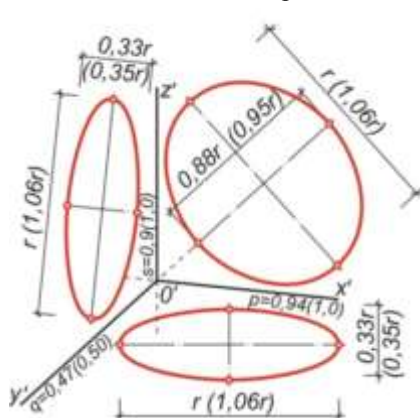


Figure 4

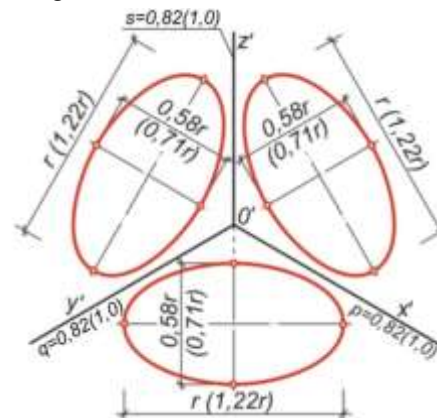


Figure 5

The dimensions shown in parentheses are shown in the figures.

Drawing a sphere on axonometry. The sphere is represented by a circle in the right angular axonometry. The radius of the sphere is equal to the true magnitude of the actual variation, and in the given values the actual radius is: 1.22 in the isometry and 1.06 in the dimeter.

The sphere is depicted as an ellipse in angular axonometry, which distorts the perception of the shape, so the angular axonometry is not recommended if the object has a sphere.[2]

The image of the object axonometry is performed first by making its characteristic (main) points, or by measuring the axonometric scales, or preferably with the change index (Figure 6 a).

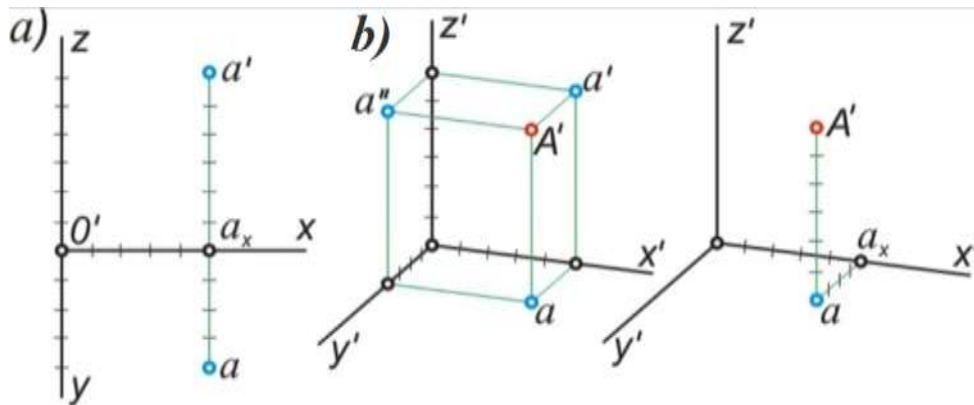


Figure 6

These measurements are made by measuring the axis of the axonometric axis or parallel lines, and initially measuring the main point (O' point).

A typical way of measuring: the axis is measured by a single x' axis of the axis, so that the axis of the axis of the point is defined; then a straight line is drawn parallel to the other line, and the corresponding axis is scaled and the plan of the point, ie the secondary projection of a point or the base of point A, is formed. will be From the point a, the

straight line is parallel to the third z axis of the axonometry, where the main projection is the distance z, which gives the point A'. There may be different sequences of graphics.

Figure 6 b shows the basic A' projection of point A and three dual projections, a, a', a'.

The straight form bounded by a curve (Fig. 7 a) and b)), its coordinates are drawn from the orthogonal plot and the individual points, taking into account the change in the rate. [4]

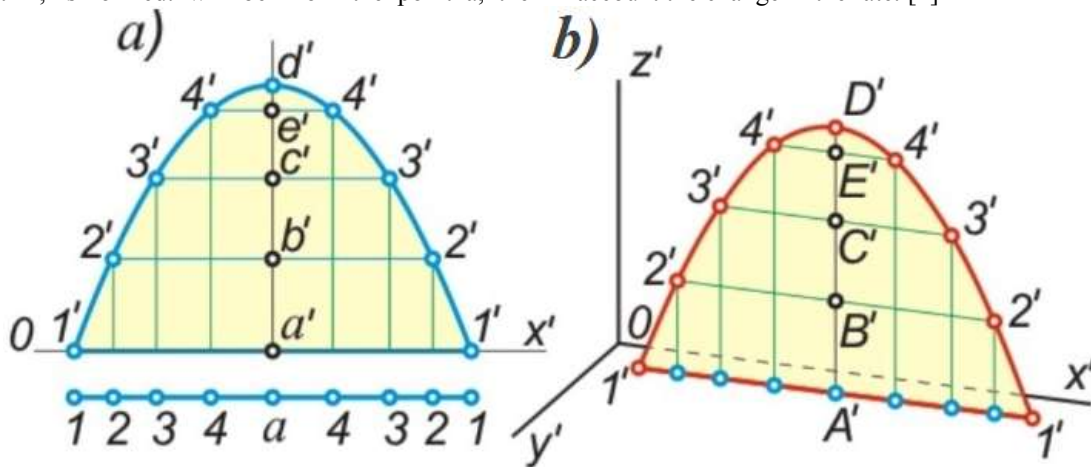


Figure 7

For the sharpness of the image, especially in the sphere shown in Figure 8, cross-sections are usually

shown.

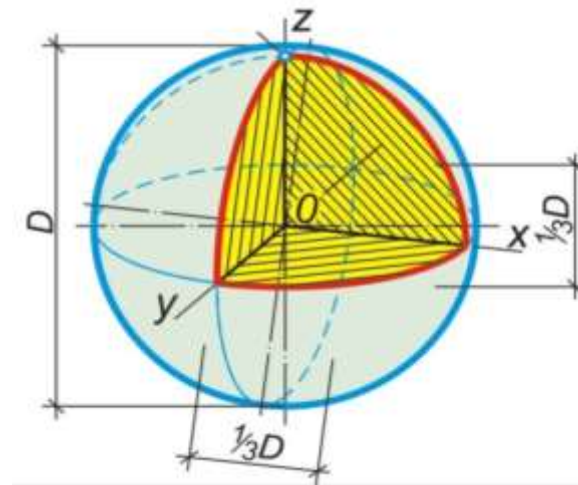


Figure 8

Solution of positional problems in axonometry. The way of life is similar to that of orthogonal projections. For ease of positioning, it is sometimes advisable to create a new axonometric projection so that the elements of the object being projected can be projected or parallel to the image. Sibling matching or using homology can also

simplify the solution.

The intersection of the two planes and the straight line intersection are shown in Figure 9.

The horizontal projection P is assumed to be perpendicular to the straight line AB; his 1040 and 2030 secondary projections cut lines 14 and 23 at 50 and 60, respectively.

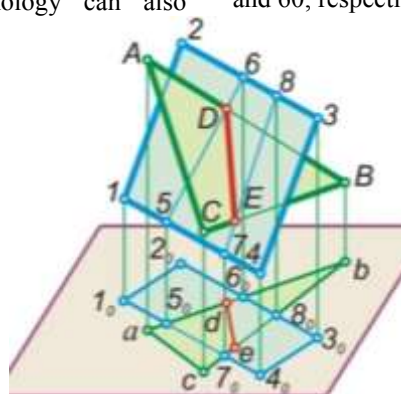


Figure 9

With this P plane, we find the intersection points of plane 1234, along the lines, and determine the intersection point D.

Similarly, the point E and the DE intersection line of the given two planes are defined.

The cone cross-section with the P plane (Fig. 10) is defined using the auxiliary B1 plane perpendicular to P. In this case, plane P is projected relative to plane B1.

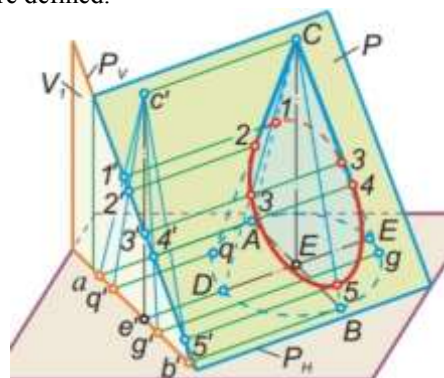


Figure 10



The cone is also projected onto the same plane B1 and its cross section is projected to be 1'5 'straight. The points on the cone makers are formed on it and the cross-section (ellipse) is formed.

with the sister-to-bases matching of the base and cross plane; Instead of the fraternity, the PH is a straight line, and instead of the fraternity, the cylinder makers work.

Figure 11 illustrates the cylinder cross section,

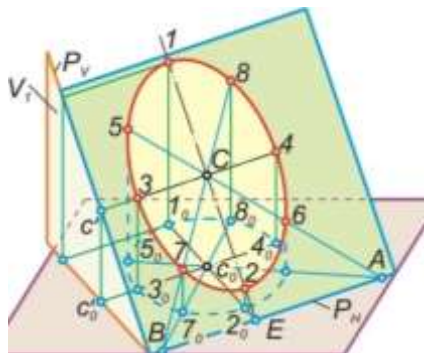


Figure 11

The points c 'and C are found along the alternating planes as before, followed by the two points' and' C, and the other points are found. Points 3 and 4 are located on a single horizontal point with point C.

The intersection curves of two cylinders in Figure 12 are determined by projecting the vertical cylinder makers to the horizontal cylinder trail, as in Figure 9.

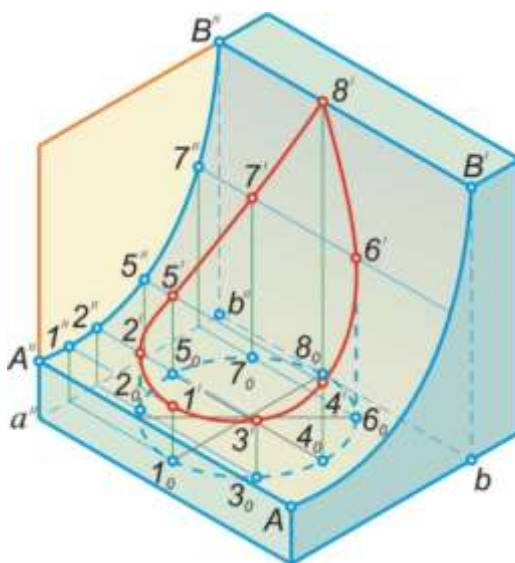


Figure 12

The curve has the first type of return point at 8 '(private).

Metric problem solving in axonometry.

Metric problems associated with straight lines parallel to axonometric arrows are relatively simple to perform additional graphic operations to measure nonlinear cross-sectional axes. This makes the measurement process much more difficult. However, it can make it easier to solve some positional issues, especially in the design of shades to be shown later.

Below is a rectangular axonometric solution to solve some metric problems on incisions that are not

parallel to the axonometric axis.

1. To determine the true size of the incisions in the rectangular dimension: a) lying on the plane A'b'-yx; b) B'b' - in the vertical position; c) ADV - random route (Figure 13).

a) Draw a cross section A'0B'0 parallel to A'b' and find the true size of it. Measure the A'0B'0 cross-section on the horizontal line A'0B1 and point B'0. Since B'0B1 straight lines A'0B'0 and A'0B1 intersect evenly in straight lines, for all straight lines parallel to A'0 B'0 Can be called a "measuring line." To measure the cross section A 'b1 (Figure 13, b), draw a



horizontal straight line from one A' end, and from the second b' end, parallel to B'O₁. and the A1b cross-section determines the true size of the A'M.

b) To determine the true size of the vertical incisions, Figure 13 a is similar to that of the painting, and the "measuring" line is placed horizontally (O₃), and the true dimensions are parallel to z'O₃. along the

slope of the line.

To determine the vertical size of MB₁ (see Figure 13, b), from M point to D'O₃, Mb₁ crosses straight line, and from point B₁ to horizontal B₁b₁, so that Mb₁ intersects MB₁. the cross-section. This is done by the so-called axonometric scale of the z axis.

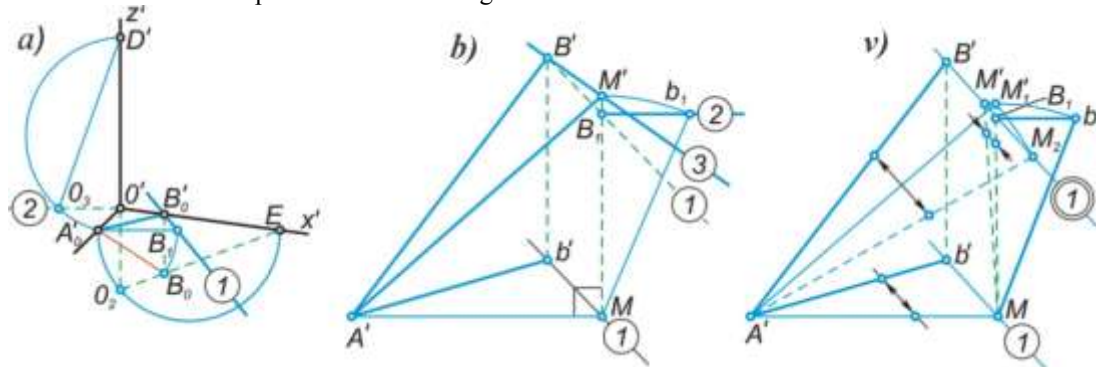


Figure 13

c) The following steps should be taken to determine the dimensions of the random AB. In the horizontal line, A'B measures the true A'M cross section; In the vertical line, the intersection of MB₁ = b'B 'true size MM' is measured; then the A'M in the right line will produce the A'B 'true size and the measuring line will be the straight line. The straight lines A'M, Mb₁, A'M 'may be called respectively' A'B ', B'b ', A'B' directions. Each of the lines of the straight lines has their own "measuring lines" - 1, 2, 3 (in circles).

Figure 13 shows the orientation of one measuring line for all three straight lines, but in this case the magnitude curves for b'B 'and A'B are different, : MM'1 for MB is A'M2 for A'B.[5]

From the above, we derive the following algorithm for constructing the true size of the cross-section in any direction: a line is drawn from one end of the cross-section to the other, and the line crosses the size measured on the first line. The position of the zoom lines and the measuring line is usually determined by the initial position of the axonometric axis.

2. A dot B is drawn by a straight line perpendicular to the triangular plane ABC, which is represented by the main A'B'C and secondary a'b'c projections (Figure 14).

Note that two straight lines - the straight line perpendicular to the plane and the horizontal projections of the slopes of this plane are overlapping and perpendicular to the horizontal plane. Create a horizontal plane C'D 'as follows: measure a'a₂, which is equal to c'C 'from a point, and a₂D' to the right, until A'B intersects with We draw a line so that the C'D 'cross is horizontal, and c'd' is the secondary projection. Figure 14 shows the combined states of the y, x, and z axes.

Create the dual position of the dual projection of the triangle c'a₀b₀ (Fig. 14 a), horizontal b₀f₀, and then determine the merged state of the sd₀ slope line perpendicular to b₀f₀, and then its projections b'f' and B'F'. we will determine.

Let's make the F'N 'true size and the slope of the F'B line the previous one. At the n 'point, cross the straight line E1N' K1, perpendicular to F'N. Let E1 be taken vertically with F 'point (for simplification of drawings).

Now back to the original line E1 N1 K1. Point N1 overlaps with point B ', and point E1 overlaps with point E' (F 'E1 decreases proportionally (to F'E)). Then E'B '(F'B).

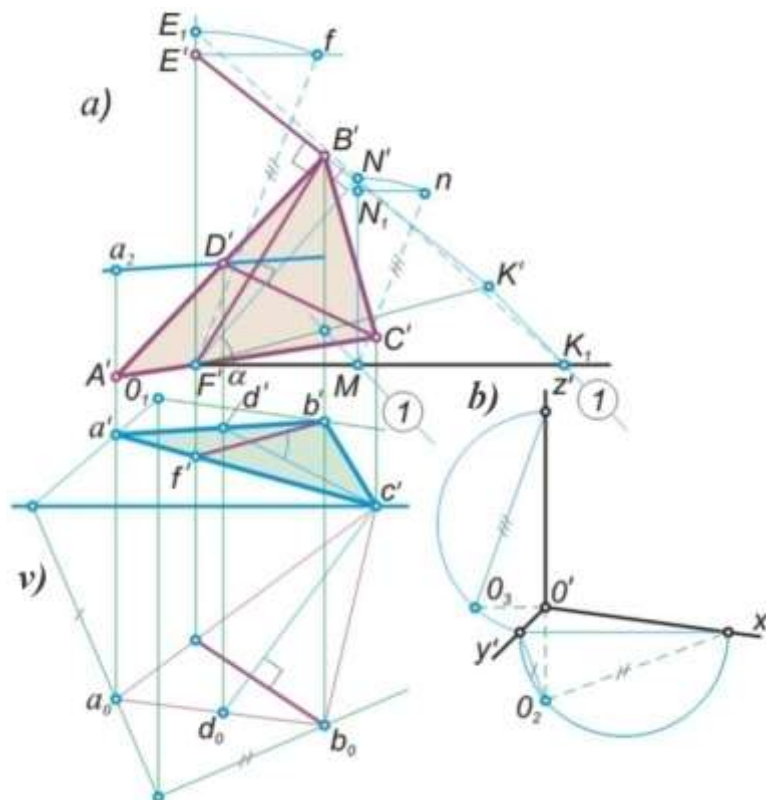


Figure 15

Instead of point E, use the K point and the K1K measuring line to determine the trace of the straight line, and point K to the point B. In this case, two more lines - one line E'B' (one set) that is perpendicular to the F'B, and the F'B' straight line found the true magnitude of the angle α of the horizontal plane.

3. Make a ball rolling cylindrical surface and make a YX intersection. The data are: the sphere line, the center C 'and secondary c' projections, the main and secondary projections of the cylinder maker orientation.

As we know, the cylinder's strike curve is in a plane that is perpendicular to the L direction, and we make it in diameters. Together (Fig. 15, b), we find the true magnitude of the radius A1B1 and the C2K1 radius perpendicular to the dual direction l projection

of the sphere. Measuring these dimensions from the center of C, we create the horizontal circle (equatorial) diameter A'B 'and K'F', and the points K 'and F' refer to the line of action. We define the maximum N and the lowest M points of the strip line as follows.

Find the true sizes A2B1 and A2D1 (Fig. 15, c) and draw the triangle A2B0D2, and draw the A2Q1 straight line perpendicular to B0D2 and measure the radius of the sphere A2N0. Return the points Q and N1, and we have the A2N1 dimension and direction of the plane of the planar circle, which is perpendicular to the given direction, namely, the upper N and the lowest M points. They lie on the slope of the plane of action. An attempt line is defined based on the diameters of two K'F 'and N'M'.

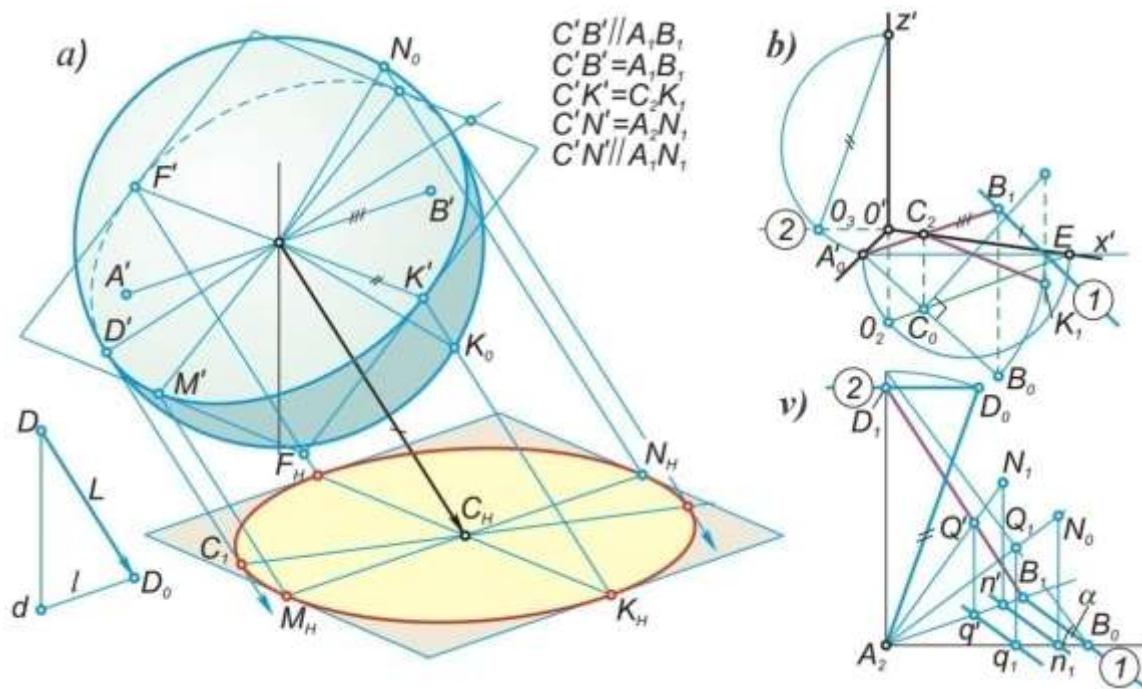


Figure 15

These projections of the diameters project the plane in the given direction, forming the diameter of the ellipsoid joints KHFH and NHMH of the cylinder surface of the moving cylinder.

This is similar to drawing the boundaries of the balloon itself and its falling shadows.

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