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CONSTRUCT THE SHADOWS OF A STRAIGHT TETRAHEDRAL PYRAMID

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Annotation. Shadows of geometric objects in orthogonal projections. Shadows of geometric objects in axonometry. Own and falling shadows of objects. Shadows falling on other objects. The shadows of a geometric body are the shadows of a straight circular cone standing on the horizontal plane of projections. Shadows of a geometric body In this case, the shadow of the base coincides with it and it remains to find shadows only from the vertex of the cone that fall on the frontal plane of projection to the point NS and the horizontal plane of projection to the point

Keywords: geometry, plane, line, parallel, projection, point, shadow.

Construct the shadows of a geometric body - a straight parallelepiped standing on the horizontal plane of projections. Shadows of a geometric body. To construct the shadows of a geometric body - the shadows of a cylinder placed on the horizontal plane of the projection. To construct the contour of the proper shadow of a cylindrical surface, it is necessary to draw tangent ray planes parallel to the direction of the light rays to this surface and find the tangent lines (forming the cylinder). Along these generators will pass the contour of its own shadow. The contour of the incident shadow from the cylinder consists of the incident shadows from the generators 2 and 4 and the incident shadow from the semicircle DAB.

The shadows of a geometric body are the shadows of a straight circular cone standing on the horizontal plane of projections. Shadows of a geometric body In this case, the shadow of the base coincides with it and it remains to find shadows only from the vertex of the cone, which fall on the frontal plane of the projection to the point NS and the horizontal plane of the projection to the point MS. From the point MS, we draw the straight tangent circles of the base and find the points A`≡MA and B`≡MB on it, connecting them with the vertex of the cone S`, we get the incident shadow of the cone on the horizontal plane of projections. The incident shadow of the cone on the frontal plane of the projection is obtained by connecting the refractive points T0 and NS.

The shadows of a geometric body in axonometry are performed by constructing a falling shadow and its own shadow. Construct the shadows of a straight tetrahedral parallelepiped standing on the horizontal plane of projections. In this case, the shadow of the base coincides with it and it remains to find shadows only from the vertices A, B and C of the upper base of the straight parallelepiped, which fall completely on the horizontal plane of the projection at the points MA, MB and MC. The incident shadow of a tetrahedral parallelepiped on the horizontal plane of the projection is obtained by connecting the points MA and MC with the shadow of the base.

Construct the shadows of a straight tetrahedral pyramid standing on the horizontal plane of projections. Shadows of a geometric body. In this case, the shadow of the base coincides with it and it remains to find shadows only from the vertex of the cone, which fall on the profile plane of projection to the point NS and the horizontal plane of projection to the point MS. We connect the point MS to the base of the pyramid and at the intersection with the axis of projections Oy we find the T0 T0 break points of the pyramid shadow. The incident shadow of the hexagonal pyramid on

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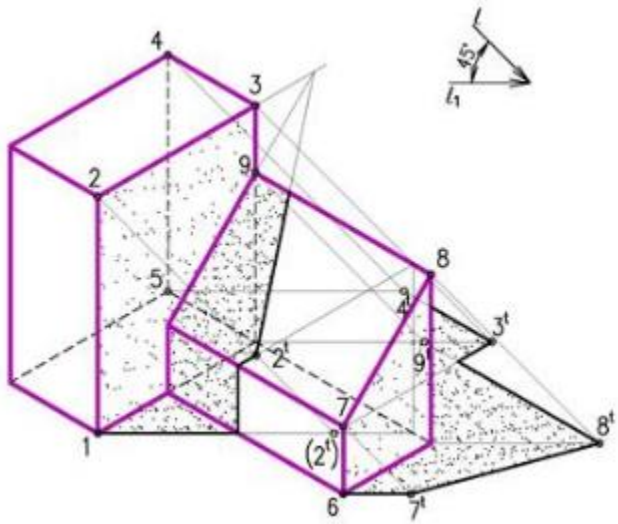
the profile plane of the projection is obtained by connecting the refractive points T0 and NS. We take the direction of the rays ℓ and ℓ1 at an angle of 45 °. We define the contour of our own shadow under this illumination.



For the high–rise part, as in orthogonal projections, the contour of its own shadow is 1,2,3,4,5. For the extension - 6,7,8,9. First we build shadows falling on a horizontal plane, i.e. on the ground. Then we build a shadow falling from the high-rise part on the extension, using the method of ray sections. The cross section represents a trapezoid. The shadow from point 2 falls on an inclined plane. According to the construction, we see that the shadow from the edge 1,2 falls on the ground, then on the vertical wall and on the roof, i.e. it goes along the cross section. Next, to plot the shadow of the straight line 2,3 on the inclined plane, we find the intersection point of the straight line 2,3 with the inclined plane and connects 2t with this point. You should always keep in mind that your own shadow is always lighter than the falling one.

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