

Constructive Geometry – Exam – CONTENT

1) 24 points

In the axonometric projection ($u_x =$, $u_y =$, $u_z =$, $\angle(x,z) =$, $\angle(y,z) =$) drawan object..... If the ray of light is line s , $s =$, construct shadow of the object on the coordinate planes. Find the shade of the object if it exists.

2) 24 points

A helical surface arises by ...a curve.... You know axis o of the helical motion, v or v_o and the type of the motion (left-hand or right-hand).

- In the multiview projection draw the surface by n positions of the curve well-proportioned on a part of one turn of the surface.
- Construct point S , $S =$, on the surface.
- Name the surface.
- Calculate the length of the given helix. Find parametric equations of one helix on the surface.

3) 18 points

Find type, important points and basic parameters of the given quadric. Sketch it in an axonometric projection using at least one cross-section by some coordinate plane or plane parallel to a coordinate one.

1. equation
2. equation
3. equation

4) 14 points

Parametric equations of the given curve are $X(t) = [\quad , \quad , \quad]$. At the given point A of the curve, find general equation of the rectifying/osculating/normal plane and an equation of the tangent/principal normal/binormal of the Frenet Frame. Set vectors of the Frenet Frame so that the coordinate system formed by them is left-hand/right-hand.