Answer on Question #70273 – Math – Calculus

Question

What are the projections of helix (acost, asint, t) in all three coordinate planes xy-plane, yz-plane, xz-plane.

Solution

The two-dimensional vector function for the projection onto the xz plane is $< acost, t >$, or in parametric form, $x = acost, z = t$.
By eliminating t we get: $x = acosz$.

The two-dimensional vector function for the projection onto the yz plane is $< asint, t >$, or in parametric form, $y = asint, z = t$.
By eliminating t we get: $y = asinz$.

The two-dimensional vector function for the projection onto the xy plane is $< acost, asint >$, or in parametric form, $x = acost, y = asintt$.
By eliminating t we get: $x^2 + y^2 = a^2$.