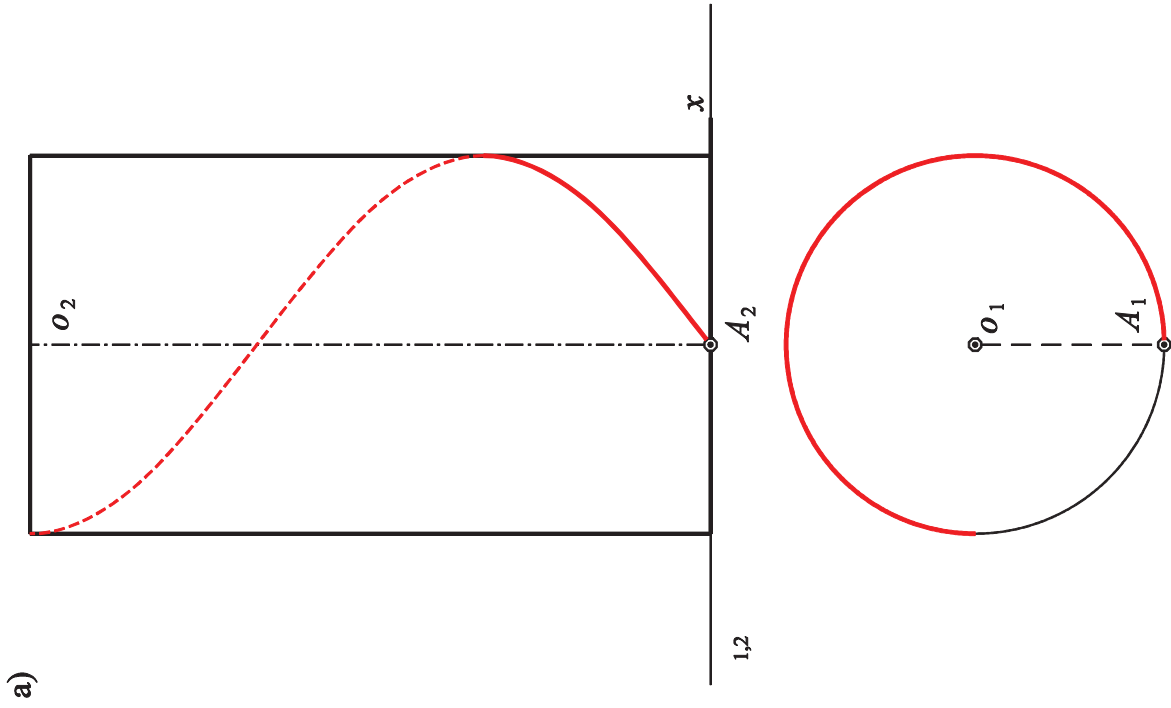
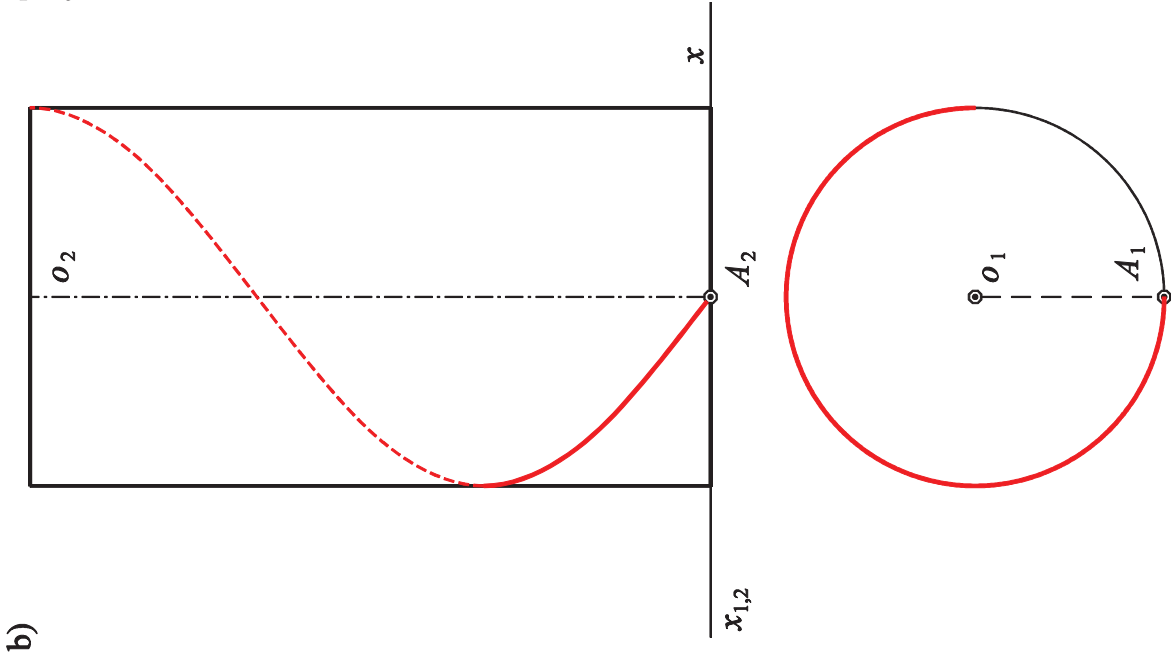
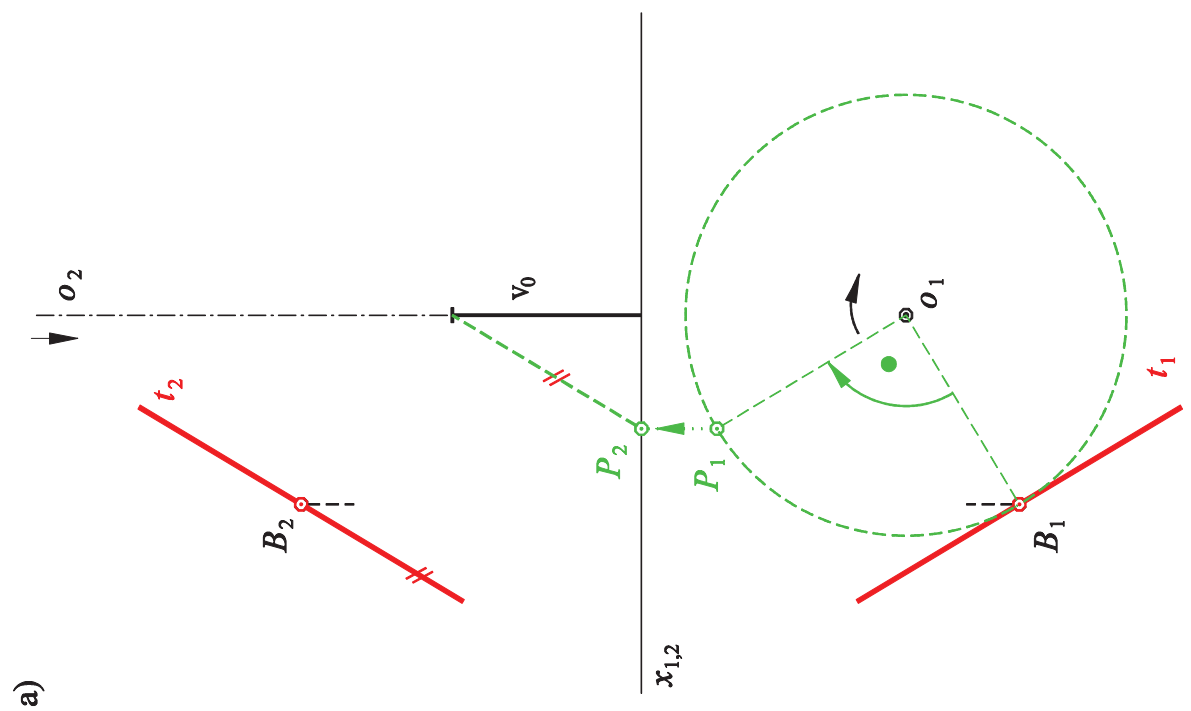
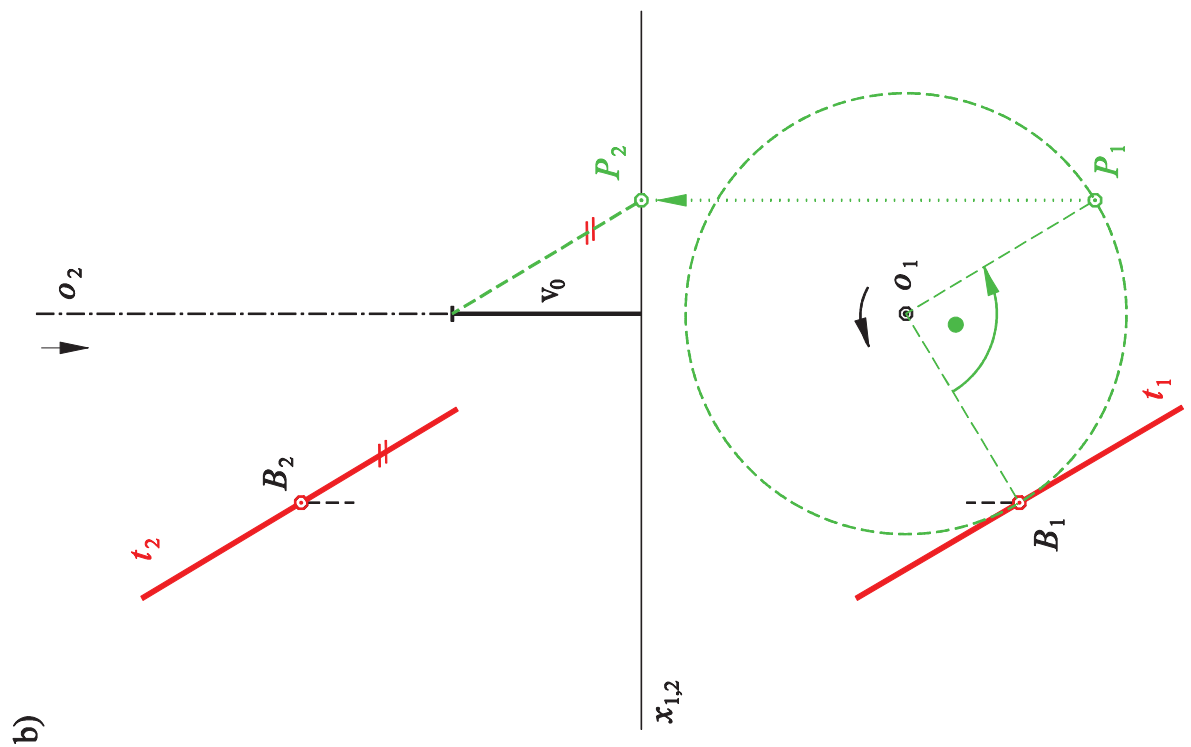


6. Helix, helicoidal surfaces

6.1. Considering the given cylinder of revolution (axis o) draw a) right-handed, b) left-handed helix generated by screw motion of point A with lead $v = 120$ mm. Use Monge projection.

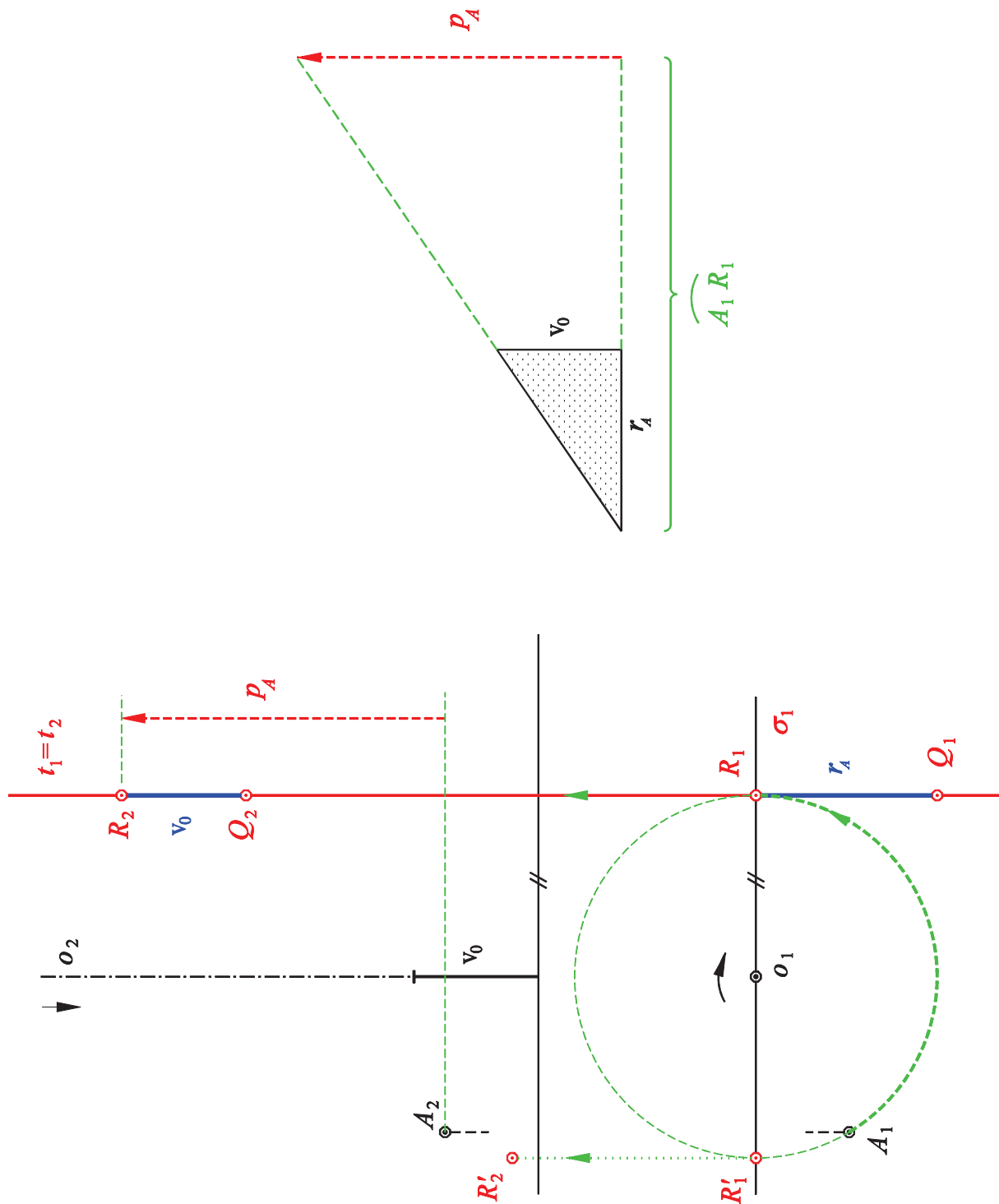


6.2. Helix (B, o, v_0, a) right-handed, b) left-handed) is given. Using Monge projection construct tangent line to the helix at its generating point B .

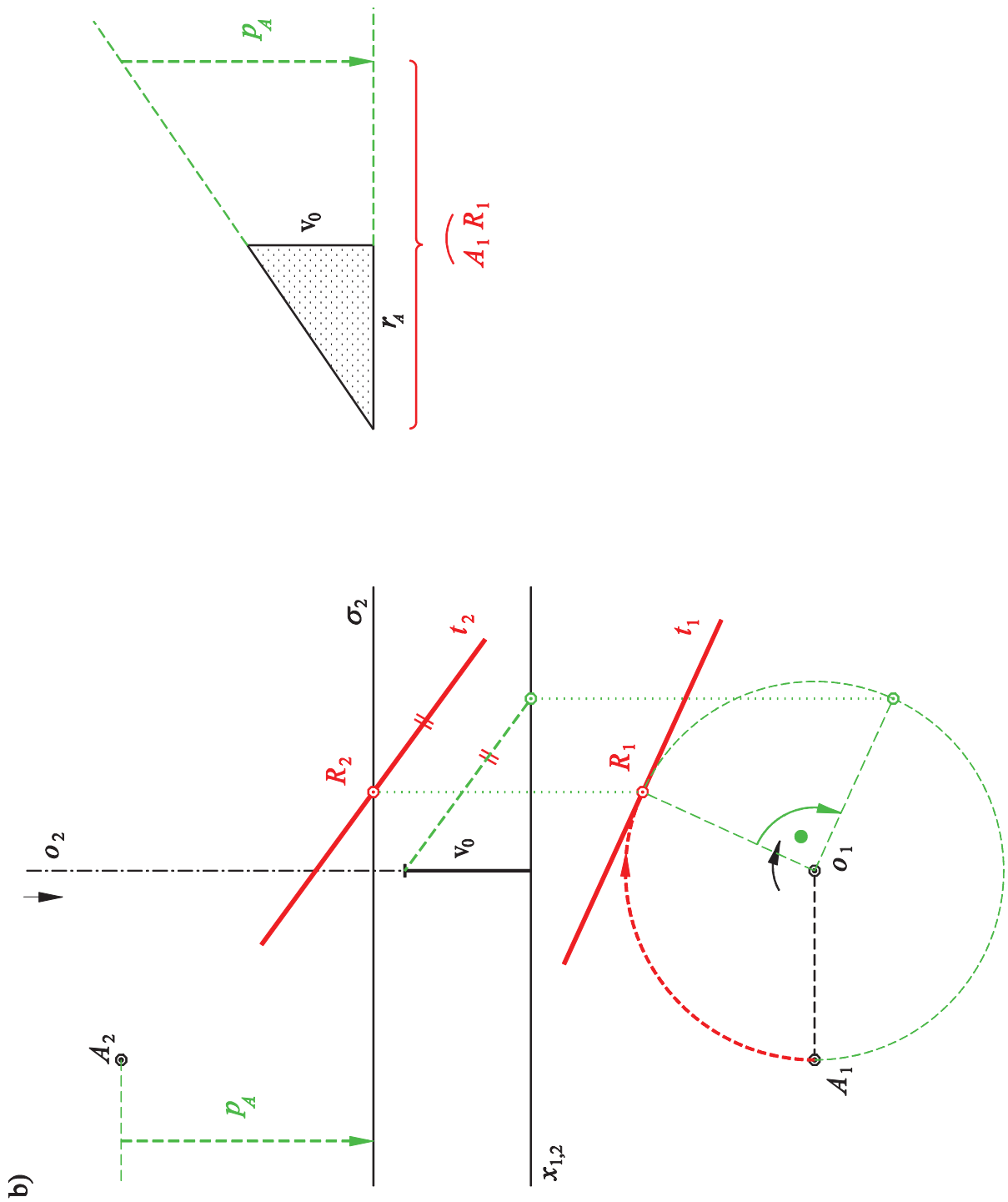


6.3. Helix $(A, o, v_0, \text{right-handed})$ is given. Using Monge projection construct intersection R of the helix and the given plane σ . Construct tangent line to the helix at point R .

a)

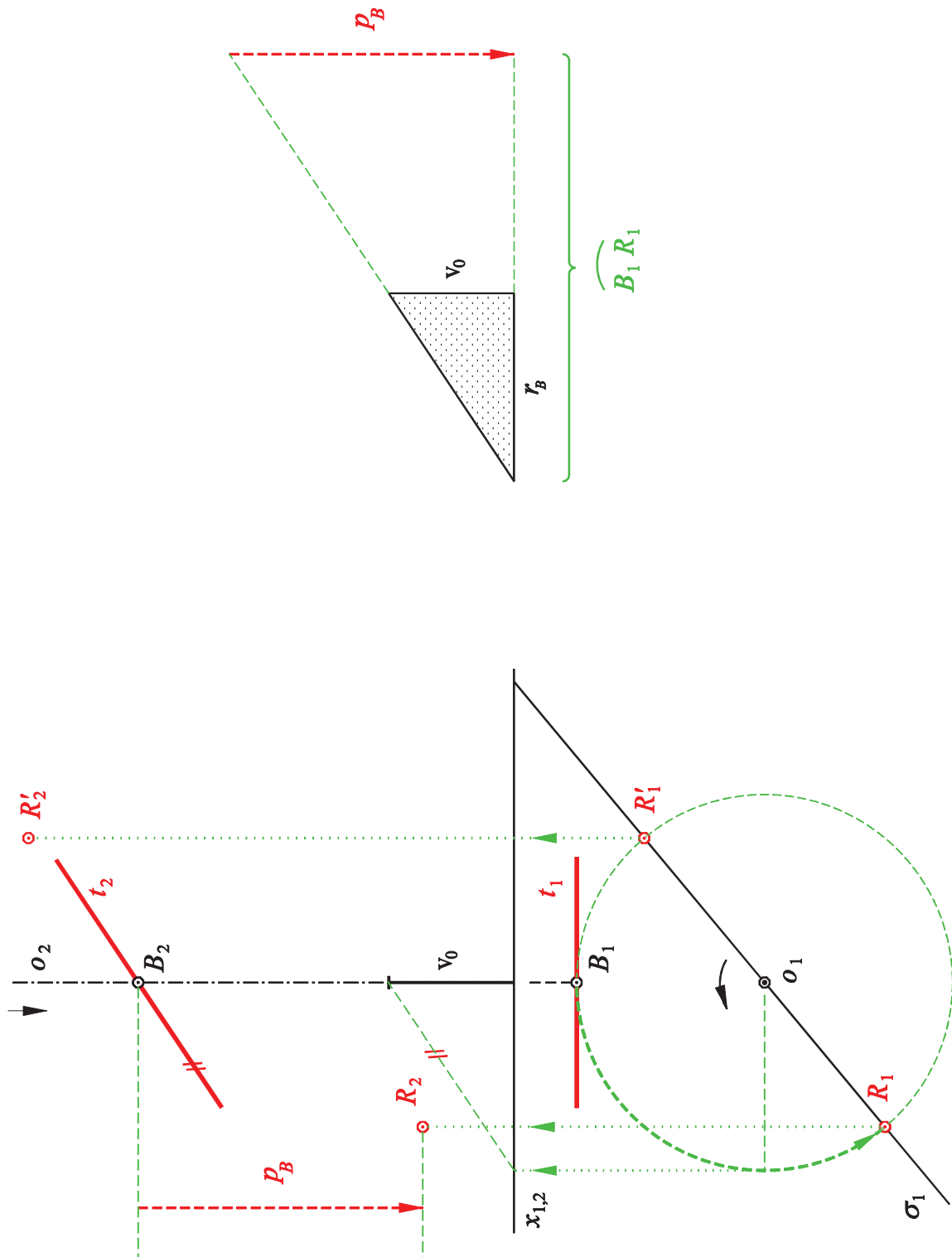


6.3 b)

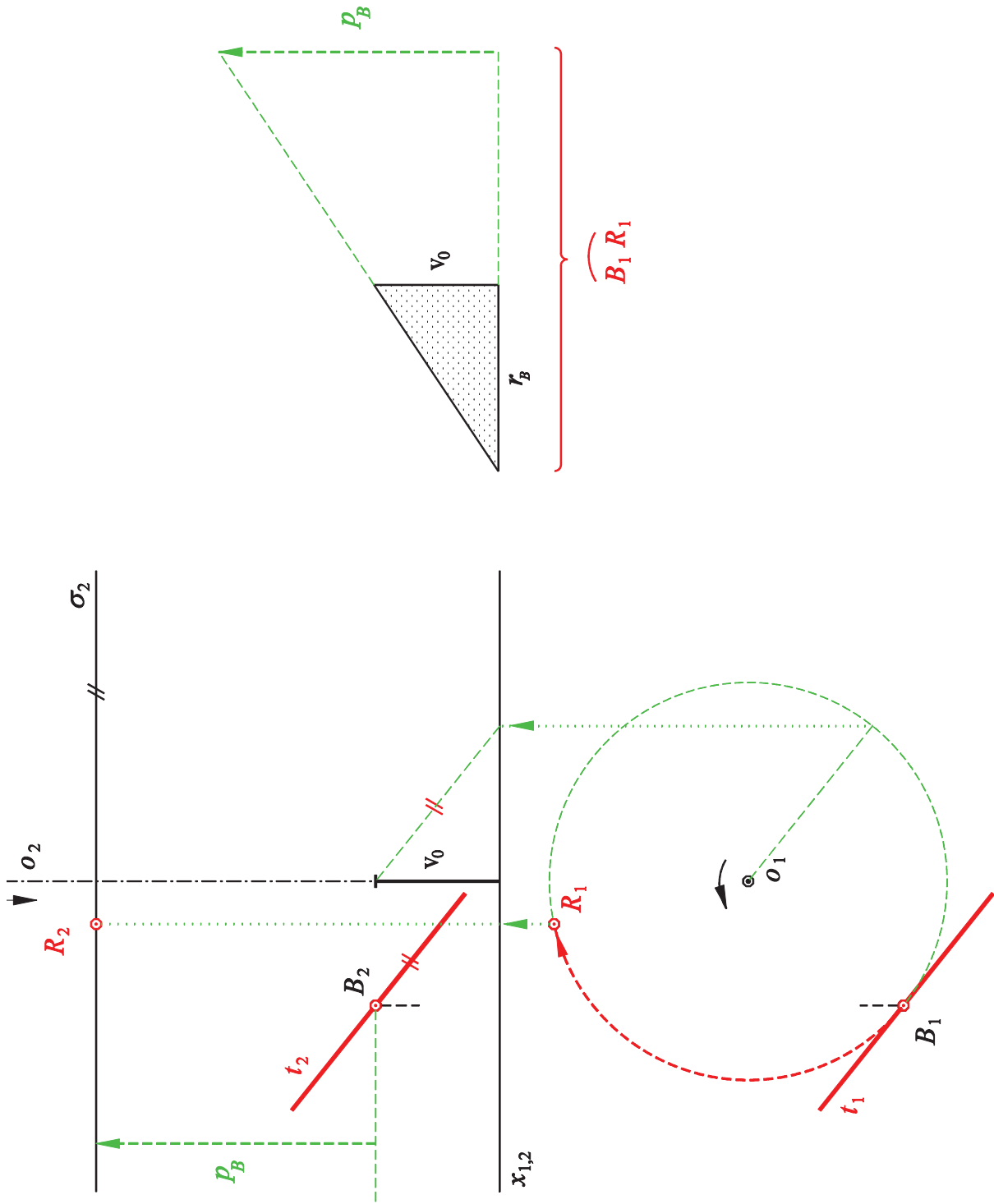


6.4. Helix $(B, o, v_0, \text{left-handed})$ is given. Using Monge projection construct intersection R of the helix and the given plane σ . Construct tangent line to the helix at point B .

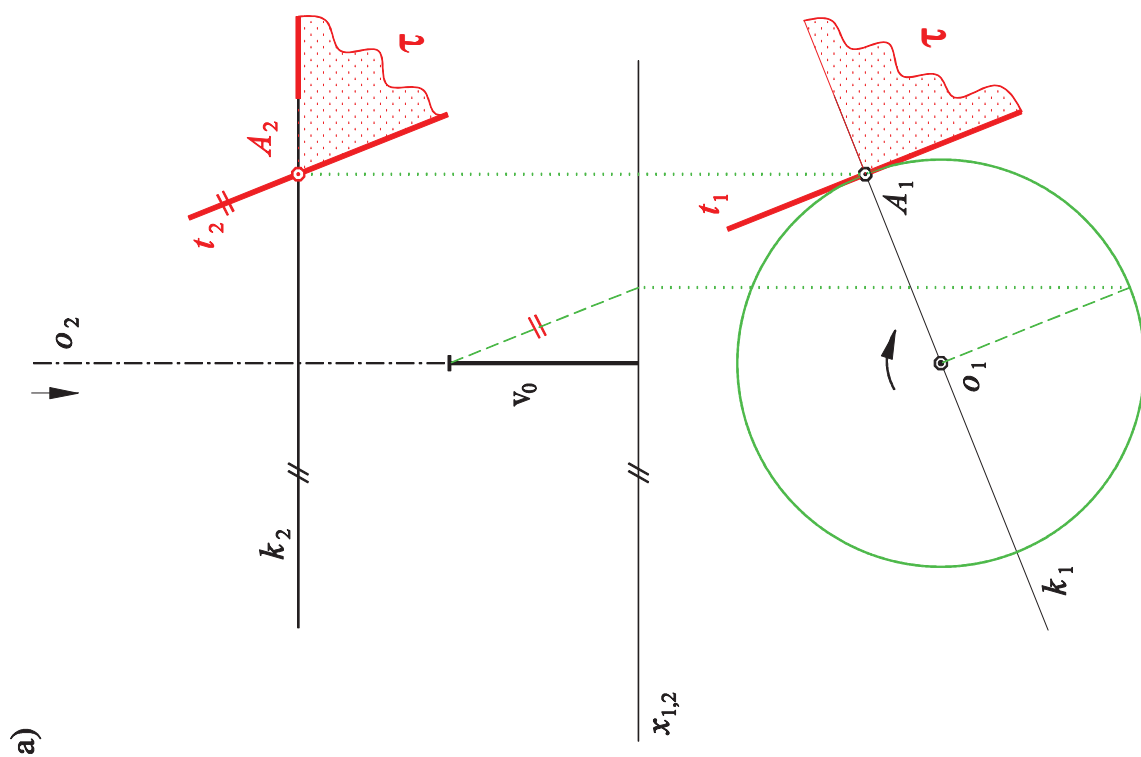
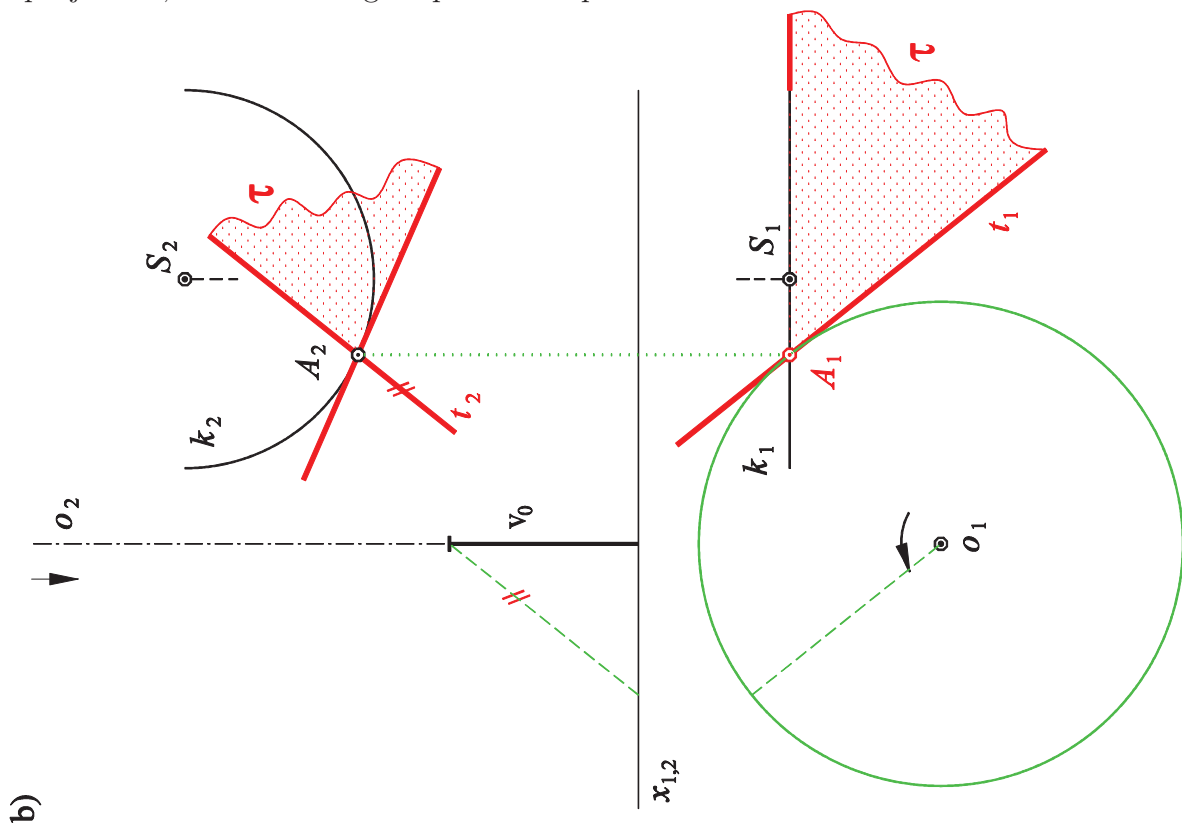
a.)



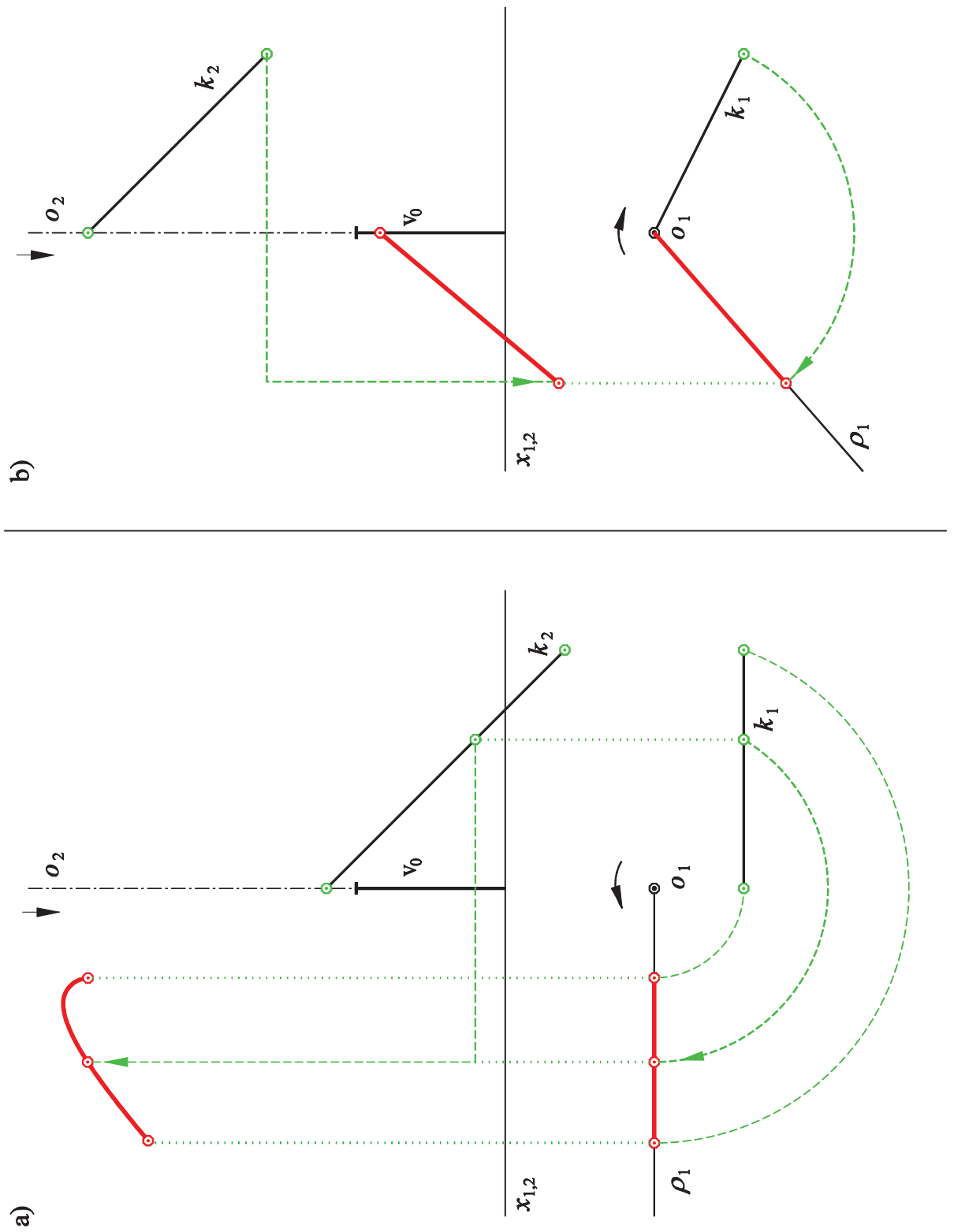
6.4 b)



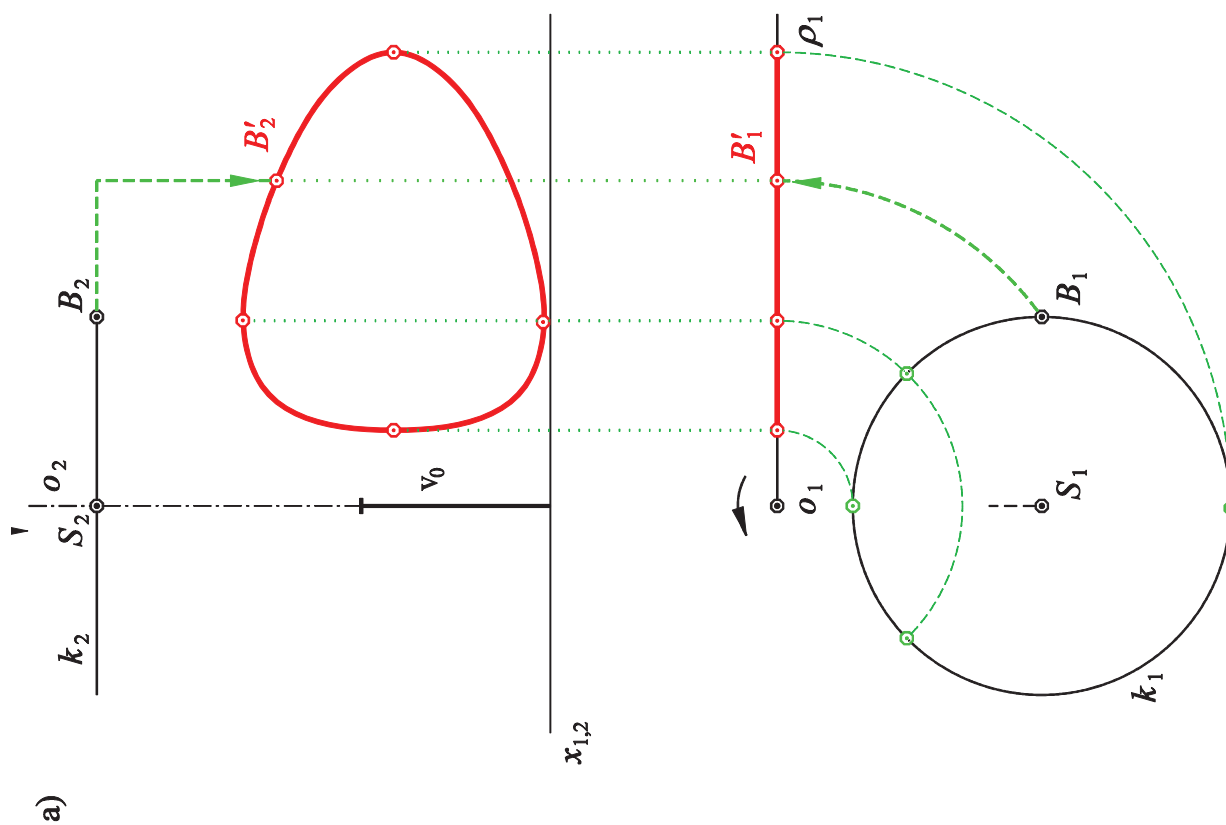
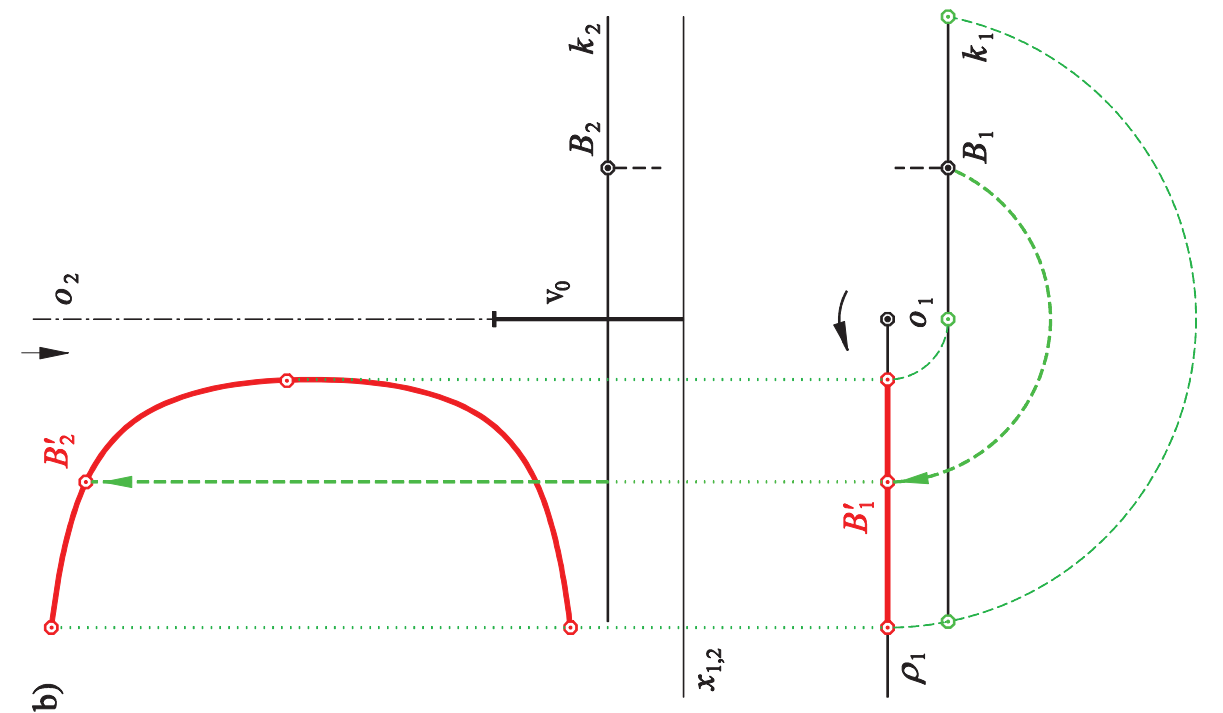
6.5. Helicoidal surface (k, o, v_0, a) right-handed, b) left-handed) is given. Using Monge projection, construct tangent plane τ at point $A \in k$.



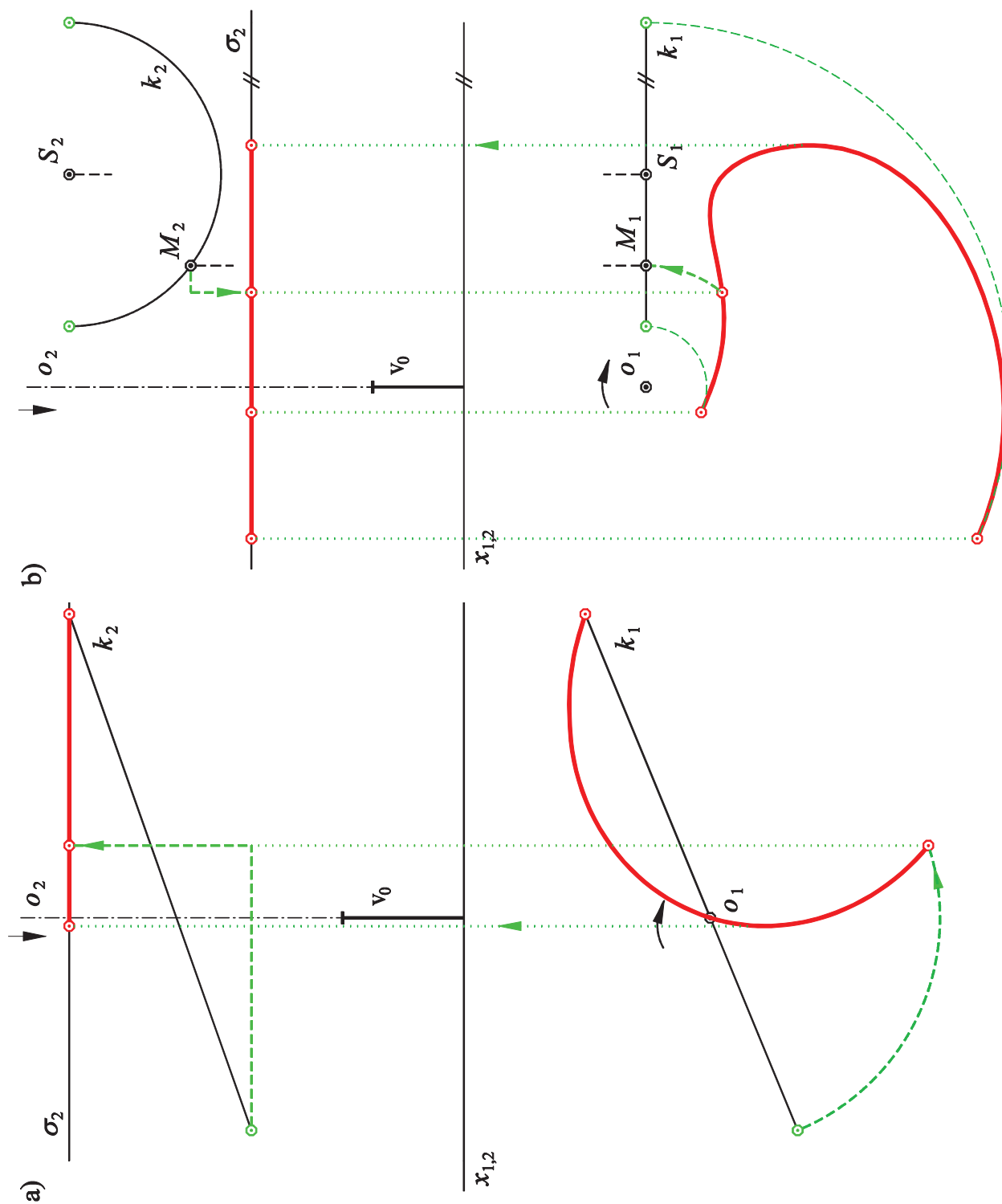
6.6. Helicoidal surface (k, o, v_0, a) left-handed, b) right-handed) is given. Using Monge projection construct the intersection of the surface and the given plane ρ .



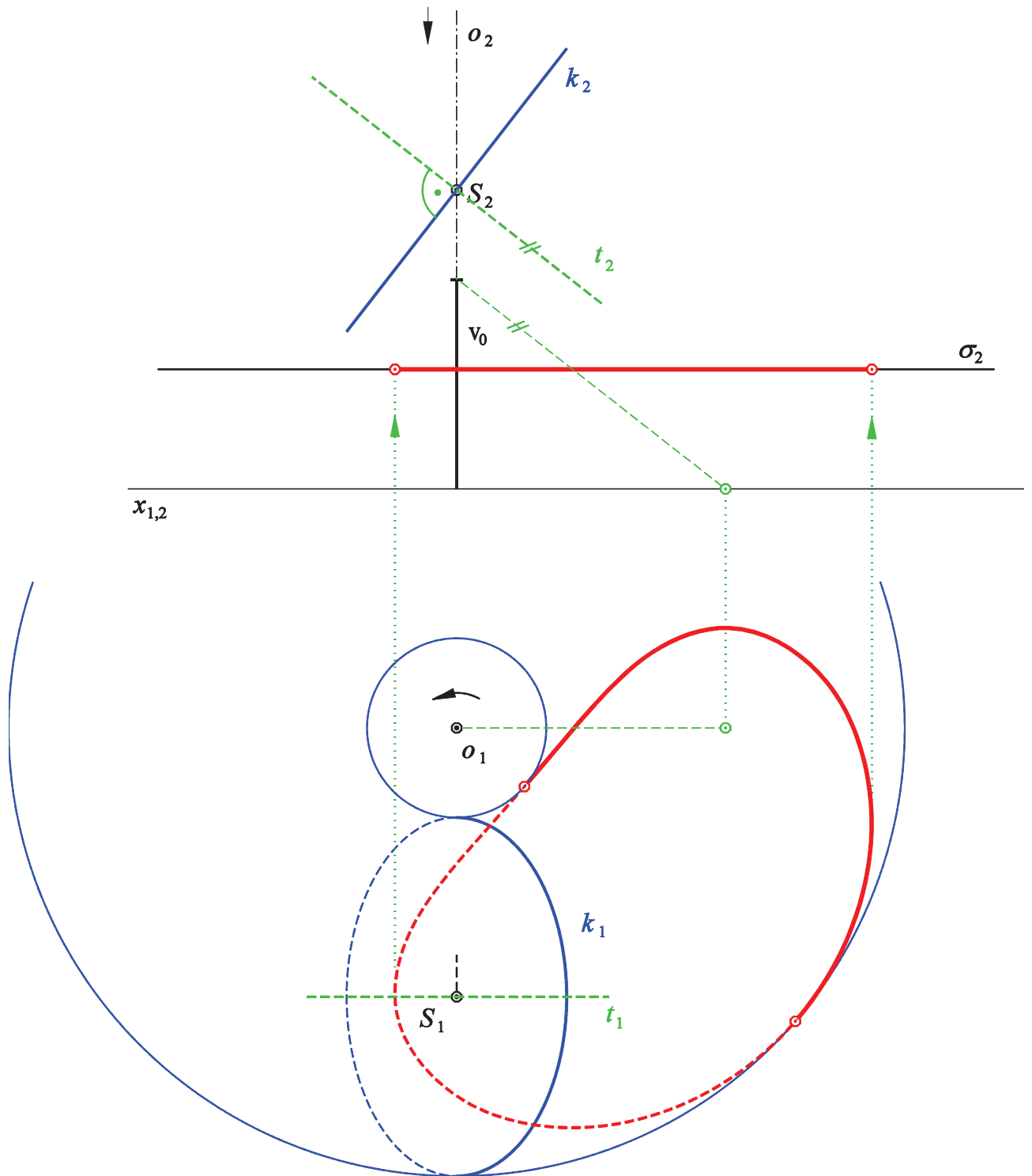
6.7. Helicoidal surface $(k, o, v_0, \text{left-handed})$ is given. Using Monge projection construct tangent plane τ of the surface at point B . Construct the curve of intersection m of the surface and the given plane ρ (principal half-meridian).



6.8. Helicoidal surface $(k, o, v_0, \text{right-handed})$ is given. Using Monge projection construct the curve of intersection n of the surface and the given plane σ (normal section).



- 6.9. Serpentine of Archimedes is given by centre S , radius $r = 30$ mm and left-handed screw motion (o, v_0) . Using Monge projection construct the generating circle. Construct the normal section n of the helicoidal surface by the given plane σ .



6.10. Helicoidal surface $(k, o, v_0, \text{right-handed})$ is given.

- Using Monge projection construct tangent plane τ of the surface at point B . Construct the normal section c of the surface and the given plane σ .
- Using Monge projection construct principal half-meridian of the surface in the given plane ρ .

