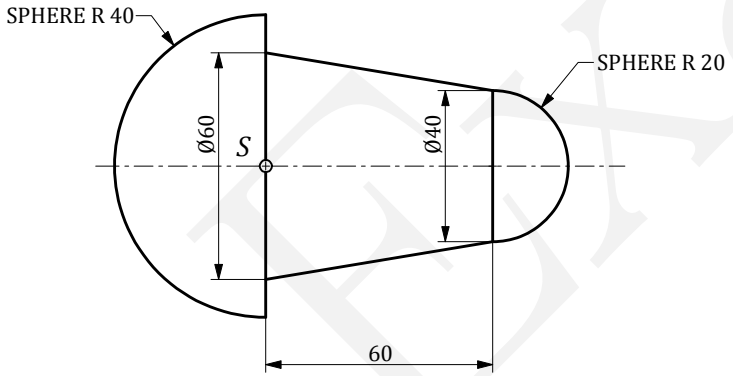
| A | CONSTRUCTIVE GEOMETRY | | | | E01A021 | | |
|---|---|---|---|---|---|---|---|
| Surname | | | | | | | |
| First name | | | | | | | |
| Date | | Examiner | | | Grade | | |
| Score | 1 | 2 | 3 | 4 | 5 | 6 | Total |

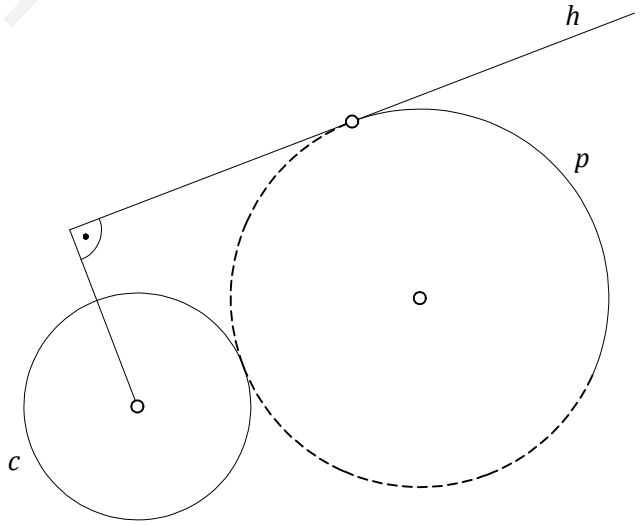
1. Construct the rotary solid given by technical drawing in technical isometry. Point $S$ lies at origin and axis of revolution of the solid is identical with $y$-axis of coordinate system.


Example

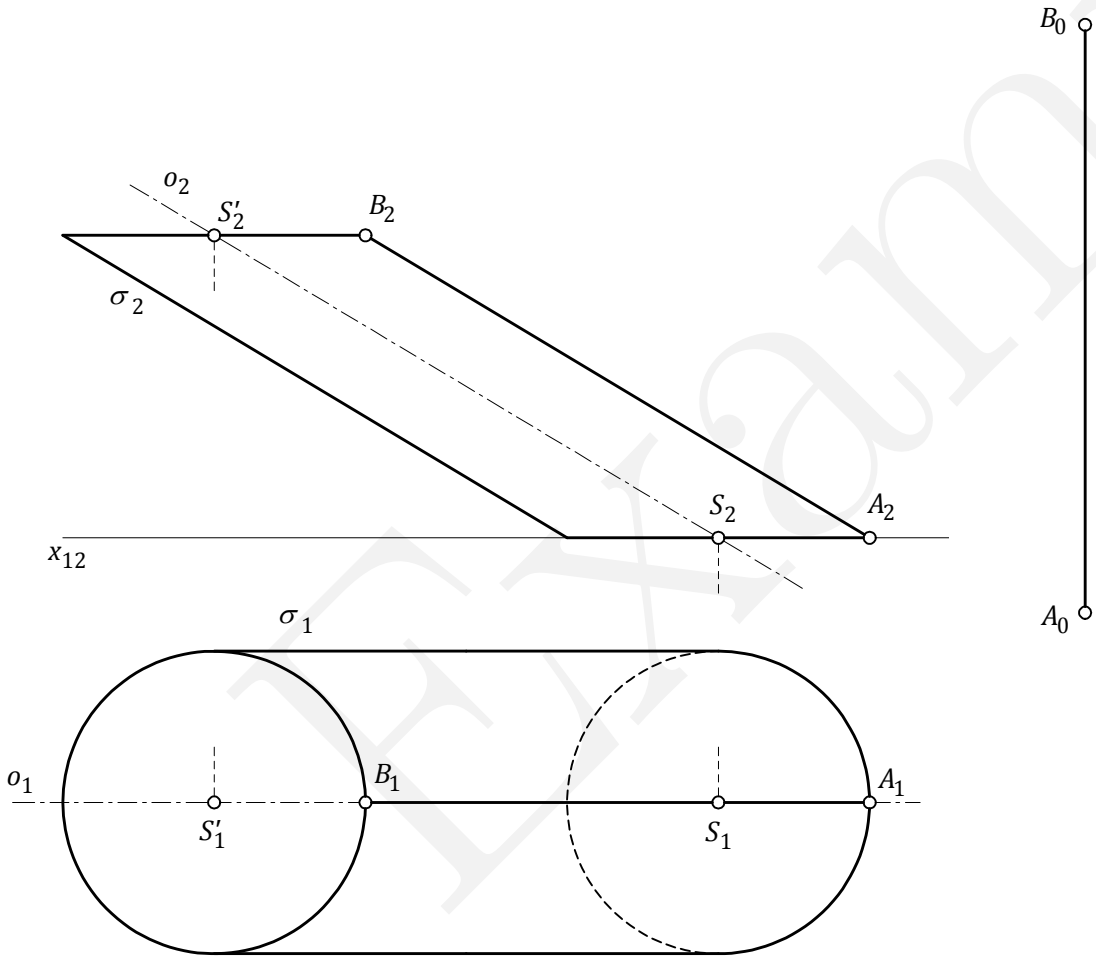
2. Determine analytically the solid drawn in example 1.

3. Involute motion is given by fixed centrode $p$ and moving centrode $h$. Considering the continuous part of fixed centrode only, construct three new positions of moving circle $c$. Construct points of contact between circle $c$ and its envelope $(c)$ at all positions and sketch the envelope $(c)$.



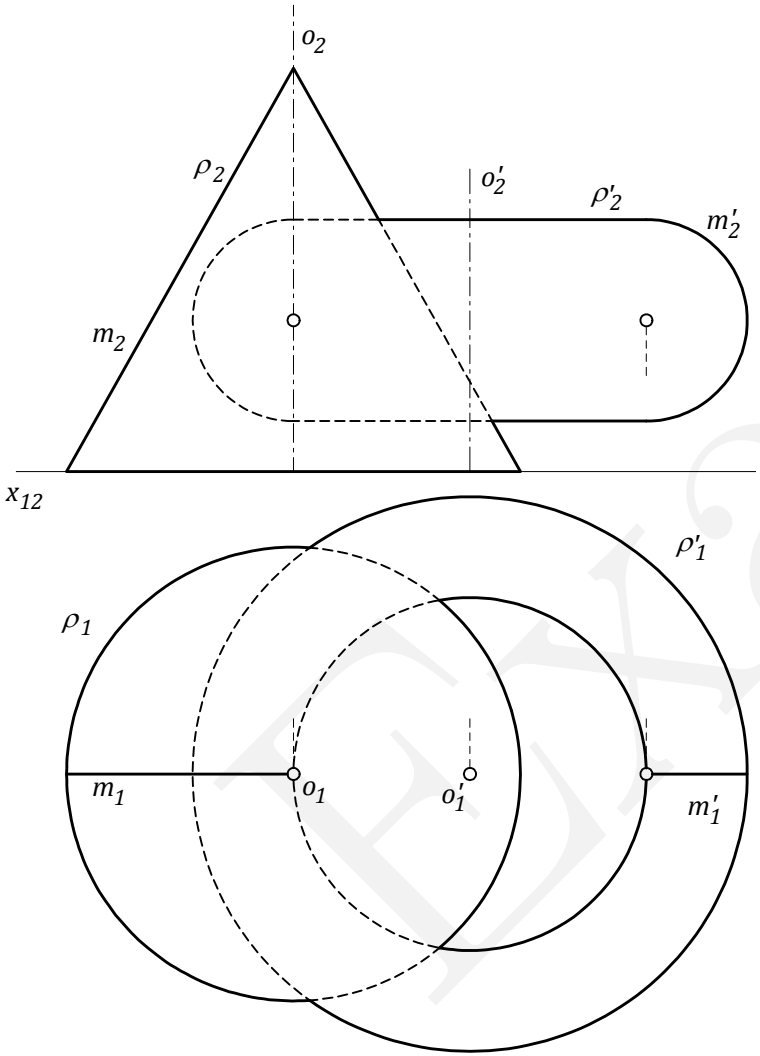

Example

4. Construct the development of oblique cylinder $\sigma$.

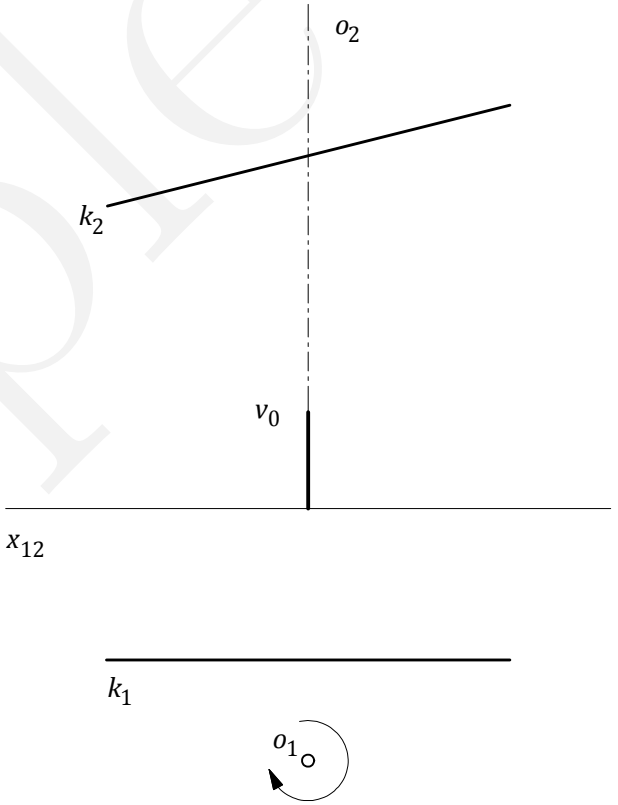



Example

5. Two surfaces of revolution $\sigma = (m, o)$ and $\sigma' = (m', o')$ are given. Using Monge projection, construct intersection curve $q = \sigma \cap \sigma'$. Indicate the visibility.




6. Helicoidal surface $\sigma = (k, o, v_0, \text{right-handed})$ is given. Using Monge projection, construct the principal meridian $m$ of helicoidal surface $\sigma$.




Example