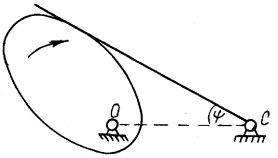
Test questions

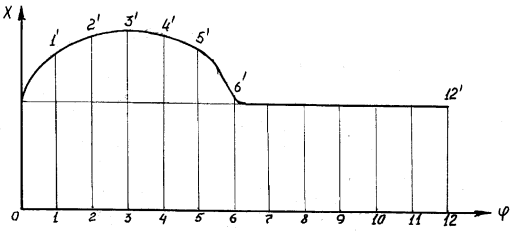
1. Geometry of toothed wheels
2. Types of cam mechanisms, angles of departure, angle of upper position, approach angle, angle of lower position. Choosing the law of motion of the follower.
3. Mechanisms with intermitted motion.
4. Types of friction. Types of lubricated friction.

Problems

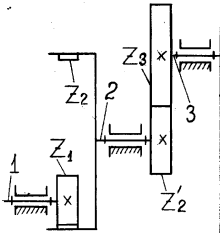
Plot the graph of follower path of the cam mechanism with rotating follower **(axial c.m., off axis c.m.).** All dimensions of mechanism, angle ψ_0 and direction of cam rotation are assumed as known

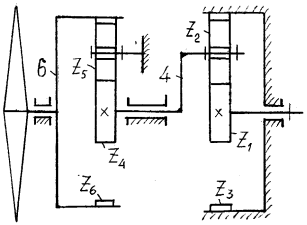


According to given graph of follower path plot the cam profile of the off-axis cam mechanism with a roller **(axial c.m., cam mechanism with rotating follower).** All dimensions of mechanism, direction of cam rotation assume are assumed as known. Eccentricity e = 10 mm.



Determine the velocity ratio of gearing if the numbers of teeth are $z_1 = 20$; $z_2 = 60$; $z'_2 = 25$; $z_3 = 50$.

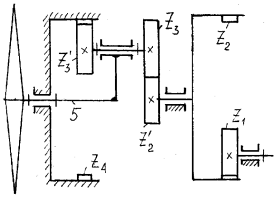


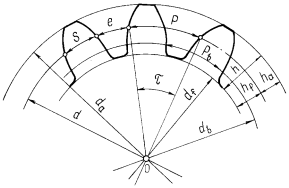


Determine the rotational speeds of propeller n_6 for gearing: $n_1 = 1800$ rpm; $z_1 = 20$; $z_3 = 100$; $z_4 = z_5 = 30$.

Determine the rotational speed of propeller n_5 for gearing:

$n_1 = 6300$ rpm; $z_1 = 30$; $z_2 = 90$; $z'_2 = 20$; $z_3 = 30$; $z'_3 = 20$; $z_4 = 80$.





Determine the addendum diameter of a gear, if nominal pitch circle diameter d =100 mm, dedendum depth h_f = 5 mm.