

- 5-1** A plate cam's reciprocating radial roller follower is to rise 2 in with simple harmonic motion in 180° of cam rotation and return with simple harmonic motion in the remaining 180° . If the roller radius is 0.375 in and the prime-circle radius is 2 in, construct the displacement diagram, the pitch curve, and the cam profile for clockwise cam rotation.
- 5-3** Construct the displacement diagram and the cam profile for a plate cam with an oscillating radial flat-face follower which rises through 30° with cycloidal motion in 150° of counterclockwise cam rotation, then dwells for 30° , returns with cycloidal motion in 120° , and dwells for 60° . Determine the necessary length for the follower face, allowing 5 mm clearance at each end. The prime-circle radius is 30 mm. The follower pivot is 120 mm to the right.
- 5-5** For a full-rise simple harmonic motion, write the equations for velocity and jerk at the midpoint of the motion. Also determine the acceleration at the beginning and end of the motion.