

Quiz

1. In the configuration of the mechanism shown in the figure, points C, A and D are collinear. If the $CA = 3$ cm, $CD = 6$ cm and $\omega_2 = 3$ rad/s CCW, find ω_4 in rad/s.

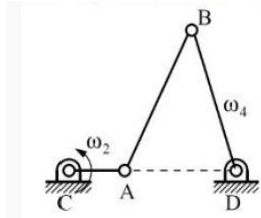
2. In the following configuration of a rigid body under certain motion, $V_A = 4$ m/s and $\theta = 30^\circ$. The direction of velocity at point B is known to be along the line BC which makes an angle $\phi = 45^\circ$ with line AB. The magnitude of velocity at B is

3. In the given configuration of a rigid body in motion, the velocities at points A and B are $V_A = 4$ m/s and $V_B = 2$ m/s with $\theta = 45^\circ$ and $\phi = 30^\circ$, respectively. AC and BC are perpendicular to each other. What is the magnitude of velocity at point C?

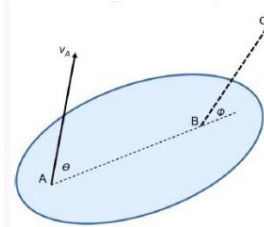
4. The number of teeth on each of the equal spur gears in mesh are 40. The teeth have 20° involute profile and the module is 8 mm. If the arc of contact is 1.75 times the circular pitch. Find the addendum

5. A pinion having 30 teeth drives a gear having 80 teeth. The profile of the gears is involute with 20° pressure angle, 12 mm module and 10 mm addendum. Find the length of path of contact, arc of contact and the contact ratio.

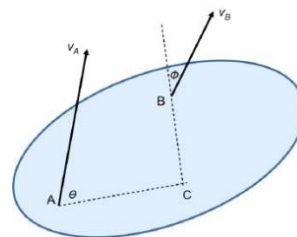
6. Two involute gears of 20° pressure angle are in mesh. The number of teeth on pinion is 20 and the gear ratio is 2. If the pitch expressed in module is 5 mm and the pitch line speed is 1.2 m/s, assuming addendum as standard and equal to one module, find: (a) The maximum velocity of sliding.



problem -1



problem -2



Problem-3