Tutorial # 4: Kinematics of Mechanisms

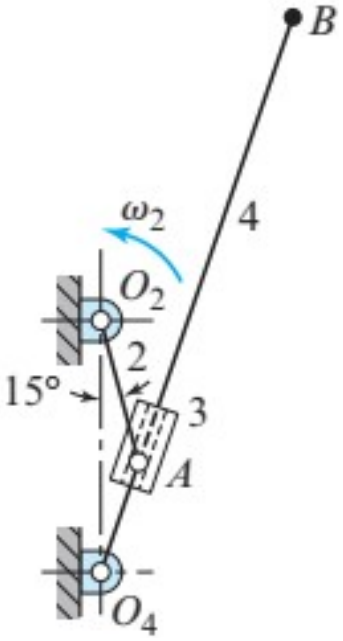

Figure 1

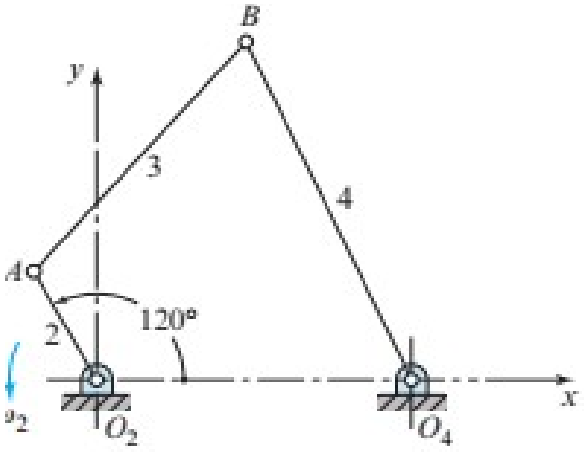

Figure 2

Q1. For the inverted slider-crank linkage in the posture shown in Figure 1, crank 2 has a constant angular velocity of 60 rev/min counter clockwise (ccw). The link lengths are given as: O_4O_2 = 12 cm, AO_2 = 7 cm, and BO_4 = 28 mm. Find the velocity and acceleration of point B, and the angular velocity and acceleration of link 4.

Q2. The four-bar linkage in the posture shown in Figure 2 is driven by crank 2. The link dimensions are: AO_2 = 4 cm, BA = 10 cm, O_4O_2 = 10 cm, and BO_4 = 12 cm. Calculate the co-ordinates of all the instant centre of velocities and angular velocities of links 3 and 4.