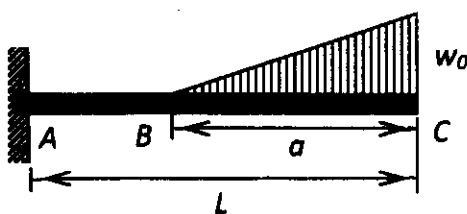※ 考生請注意：本試題 ☑可　□不可 使用計算機

1. (20%) Determine the range of values of *P* for which both cables *AC* and *BC* remain in tension.

2. (20%) Determine the force in members *BD* and *CD* of the truss shown.

3. (20%) Draw the shear and bending-moment diagrams for the loading shown.

4. (20%) A ball rebounds as shown after striking a vertical wall with a velocity v_0 of magnitude v_0 = 5 m/s. Knowing that the coefficient of restitution e = 0.75 between the ball and the wall, determine the velocity and the distance x when the ball hits the ground.

5. (20%) A uniform slender rod of length *L* = 1 m and mass *m* = 1 kg hangs freely from a hinge at *A*. If a force *P* = 4 N is applied at *B* horizontally to the right, determine (a) the angular acceleration of the rod, (b) the components of the reaction at A.
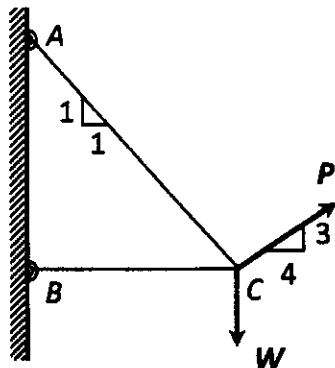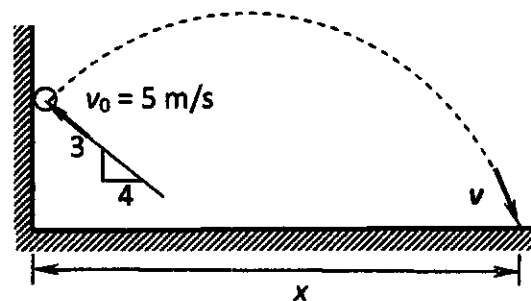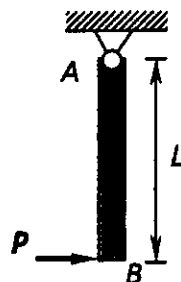

Problem 1
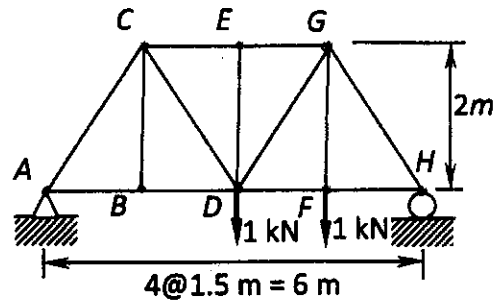
Problem 2

Problem 3

Problem 4

Problem 5