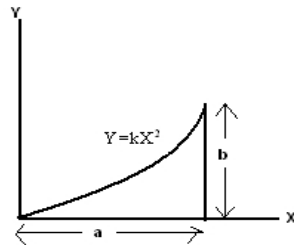
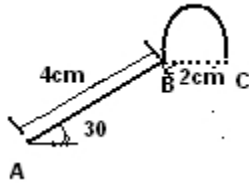


Assignment

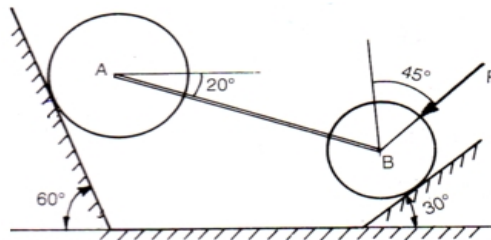
1. Resultant of two forces which are acting at an angle of 45° in which one force is double of the other, is 25kN and it makes an angle of 30° with the smaller force, find the magnitude of two forces.
2. Two forces of magnitude P & Q are acting at an angle of 45° . The magnitude of their resultant is 80N at an angle of 15° from P . Determine the magnitudes of P & Q .
3. Determine the Centroid of area bounded by x axis, line $x=a$, and parabola $y=kx^2$ as shown in figure.



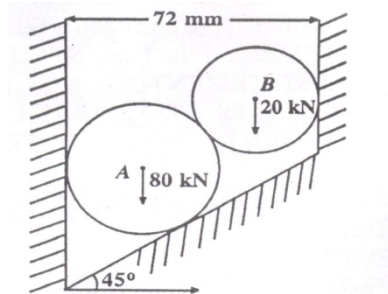
4. Locate the Centroid of uniform wire shown in figure with respect to point A.



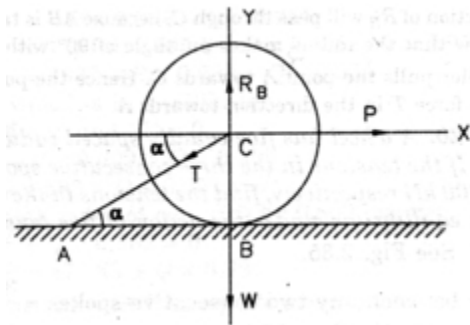
5. Cylinder A and B weighing 5000N and 2500N rest on smooth incline planes as shown in figure. Neglecting the weight of connecting bar and assuming smooth pin connections, find the force P to be applied such that the system is in the equilibrium.



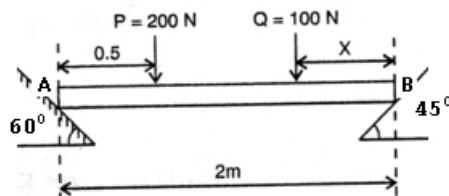
6. Two cylinders A and B of diameters 6cm and 3 cm weighing 80kN and 20 kN respectively are placed as shown in figure. Assuming all contact surfaces to be smooth, find the reactions at the walls.



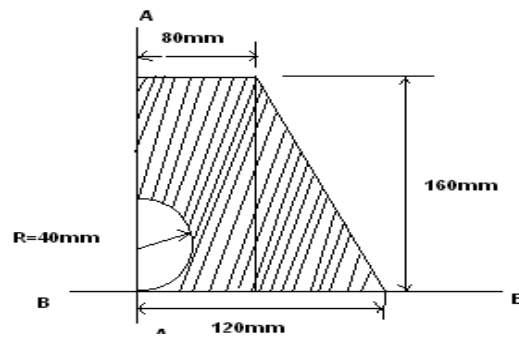
7. A right circular roller of weight W rests on a smooth horizontal plane and is held in position by a string AC as shown in fig(7). The roller is pulled by a horizontal force P applied to its center. Find the reaction at B and tension of the string.



8. A rod 2m long & of negligible wt. rests in horizontal position on two smooth inclined planes. Determine distance 'x' at which the load $Q = 100N$ should be placed from point B to keep the bar horizontal as shown in figure.



9. Calculate Moment of Inertia of shaded portion about line A-A and B-B.



10. Analyze the truss shown in figure.

