Perpendicular Axis Theorem

1. ABCD is a uniform lamina of mass M. AB=*2a* and BC=*2b*. Find the moment of inertia of the lamina about an axis through A and perpendicular to the plane ABCD.
2. A uniform square lamina of mass *M* has sides of length *2a.* Find its moment of inertia about
3. An axis of symmetry parallel to one side,
4. An axis through the centre perpendicular to its plane,
5. A diagonal [1/3*Ma*2, 2/3*Ma*2, 1/3*Ma*2]
6. A uniform square lamina is of mass *m* and its edges of length *2a*. Write down the moment of inertia of the lamina about one edge. Hence, or otherwise, show that the moment of inertia about a line through a corner and perpendicular to its plane is 8/3 *ma*2.
7. A rectangle, ABCD, has mass 6 kg. AB=6m and BC=4m. Find its moment of inertia about
8. Its centre perpendicular to the plane ABCD. [26 kgm2]
9. A line through E perpendicular to the plane ABCD, where E is on AB and AE=1 m.

[74 kgm2]

1. A uniform cuboid of mass *m* has edges of length 10m, 6m and 5m(height). Calculate the moment of inertia of the cuboid about an edge of length 5m. [136/3 *m* kgm2 ]
2. Find the moment of inertia of a uniform disc of mass M and radius a about its tangent.

[ 5/4 Ma2 ]