**IB Physics**

**8.2 Group Quiz**

Name

Favorite Film Maker

**Show your work, and circle your answers and use sig figs to receive full credit.**

I (about centers): cylinder = 1/2mr2, ring/point = mr2, sphere = 2/5mr2, rod = 1/12mL2 (= 1/3mL2 about end)

1. A mechanic needs to exert 385 mN of torque. He weighs 833 N and he stands on the handle of his wrench that is making a 17.0o angle above the horizontal. How far from the center must he stand? (Be careful what you use for the angle)

17.0o

r = ??

F = 833 N

2. What is the acceleration of a flywheel with a moment of inertia of 0.145 kgm2 if a torque of 2.80 mN acts on it?

3. A 0.680 m diameter flywheel has a moment of inertia of 0.243 kg m2. What is the angular acceleration of the flywheel if you exert 4.50 N tangentially at the edge to speed it up?

4. A 0.210 m radius grinding disk is spinning at 1350 RPM. If it goes through 85.0 rotations being brought to rest by a 1.20 N frictional force applied tangentially at its edge, what is the moment of inertia of the disk?

5. A 4.30 m diameter (cylindrical) merry go round going 45.0 RPM stops in 37.0 rotations because of an 8.30 N force applied tangentially at the edge. What is the mass of the merry go round?