**IB Physics**

**FA9.3 - Trans. and Tors. Equilibrium**

Name

Favorite Book Series

**Show your equations of equilibrium, and circle your answers and use sig figs to receive full credit.**

1. Find the forces F1 and F2 (magnitude and direction). Assume the beam is uniform. (-66.2 N (down), 361 N (up))

18.0 kg

12.0 kg

F2

F1

5.5 m

9.00 m

4.00 m

2. Find the tension in the cable, and the components of the force that the wall exerts: Wx and Wy. Show all three equations of equilibrium: x, y and torque. The sign has a mass of 14.0 kg and hangs 3.10 m from the left side. The cable forms an angle of 32.0o with the beam and is connected 0.900 m from the right end. The uniform beam is 5.00 m long, and has a mass of 21.0 kg. (T = 433 N, Wx = +367 N right, Wy = +114 N up)

Bob’s Fish and Bait