**IB Physics**

**Group Quiz 09DE**

Name

Favorite Comedy

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

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| 1. Someone puts a 15.0 gram clamp at the 8.00 cm mark and a 35.0 gram clamp at the 55.0 cm mark of a 67 gram uniform meter stick. Where is the COM of the system now? (don't forget the meter stick itself) |
| 2. A 78.0 g uniform meter stick has a 17.0 g clamp at the 45.0 cm mark. Where would you clamp a 38.0 g clamp to make it balance at the 60.0 cm mark? |
| 3. A 108 g uniform meter stick balances at the 44.0 cm mark when there is a 13.0 g clamp at the 85.0 cm mark and a what mass clamped at the 12.0 cm mark? |

4. The beam is uniform and 18.0 m long with a mass of 92.0 kg. It is attached to the wall with a hinge. Box A is centered 1.50 m from the right side, and has a mass of 68.0 kg, and box B is 2.30 m from the left side and has a mass of 45.0 kg. What force is needed 6.00 m from the left side to support the beam?

92.0 kg

68.0 kg

45.0 kg

5. Set up a vertical equation of force equilibrium and solve for the vertical force the hinge is exerting on the left side of the beam. Is it up or down?