

**Worksheet 1  $\frac{1}{4}$**   
**HOMEWORK & CLAIM**  
**DR. M. P. M. M. McLOUGHLIN**  
**SPRING OF 2012**

1. (Mr. O'Connor's Claim) Prove or disprove.

Let  $g((x, y))$  be a well defined joint probability function.<sup>1</sup> Further let  $g_X(x)$  be the marginal probability function and  $g_Y(y)$  be the marginal probability function such that  $\mu_X$  exists and  $\mu_Y$  exists. It is the case that the point  $(E[X], E[Y])$  is the equilibrium point for the solid over the x-y plane.

2. Do problems 1 and 2 on worksheet1 $\frac{1}{2}$

3. Do problems 2 and 4 on worksheet3

That is all.

---

<sup>1</sup>We define joint probability function to mean joint probability mass function when  $g((x, y))$  is for discrete random variables but we mean joint probability density function when  $g((x, y))$  is for continuous random variables.