8a $\langle L_0, L_1 \rangle = 0$

$$\int_0^\infty L_0 L_1 \, dx = 0$$

$$\int_0^\infty (1-x)e^{-x} \, dx = 0$$

$$\int_0^\infty e^{-x} \, dx - \int_0^\infty x e^{-x} \, dx = 0$$

$$\lim_{b\to\infty} \left[\int_0^b e^{-x} \, dx - \int_0^b x e^{-x} \, dx \right] = 0$$

$$\lim_{b\to\infty} \left[-e^{-x} \Big|_0^b + e^{-x}(x+1) \Big|_0^b \right] = 0$$