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A correction to «On monotonity-preserving transformations» (Ann. UMCS, vol. VI (1952), pp. 91-111).

Prof. R. Sikorski has kindly called my attention to the fact that the lemma 5.2, p. 102 of the above mentioned paper is incorrectly stated. It should read:

If the infinite integrals $\int_0^{+\infty} b(x)\,U(x)\,dx$ *and* $\int_0^{+\infty} b(x)\,dx = a$ *both exist and* $U(x)$ *is a monotonic function, then*

$$\int_0^{+\infty} b(x)U(x)\,dx = a\,U(0) + (RS)\int_0^{+\infty}\left[\int_x^{+\infty} b(t)\,dt\right]dU(x).$$

Proof. $b(x)$ has $-\int_x^{+\infty} b(t)\,dt$ as an indefinite integral.

Integrating by parts, we have

$$\int_0^{A} b(x)\,U(x)\,dx = \left\{U(x)\left[-\int_x^{+\infty} b(t)\,dt\right]\right\}_{x=0}^{x=A} +$$

$$+ (RS)\int_0^{A}\left[\int_x^{+\infty} b(t)\,dt\right]dU(x) = -U(A)\int_A^{+\infty} b(t)\,dt + a\,U(0) +$$

$$+ (RS)\int_0^{A}\left[\int_x^{+\infty} b(t)\,dt\right]dU(x).$$

Making $A \to \infty$, we obtain, in view of corollary, our lemma. This mistake does not vitiate the validity of the theorem 6.1. The proof of this theorem can be obviously modified and the sufficiency of the conditions (6.11) and (6.12) can be easily proved by means of the so corrected lemma 5.2.