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Transformation formulas associated with integrals involving the Riemann Ξ-function.

Page 220 of Ramanujan's Lost Notebook contains a beautiful transformation formula involving the digamma function which is also associated with an integral involving the Riemann Ξ-function. Here we discuss some new transformation formulas of this type, of which one generalizes Ramanujan's transformation formula. Also included are new extensions of formulas of N.S. Koshliakov, A.P. Guinand and W.L. Ferrar. (Received August 18, 2009)