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## Determination of the Wall Temperature Change for a Cavity in a Solid as a Result of the Temperature Change of the Gas Flow in a Cavity

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The wall temperature change for a cylindrical cavity in a solid was found as a response to the temperature change of the gas flowing in a cavity. Three important special cases of the gas temperature dependence on time are considered: temperature is constant; temperature changes according to the linear law; temperature changes according to the harmonic law. The plots of five « $\theta$ -functions» used to denote solutions are submitted. The plots are obtained by the means of the numerical integration of the Gauss quadrature formula applied to improper integrals containing cylindrical functions.

*Key words:* cylindrical cavity, nonstationary heat conductivity, convective heat transfer, Bessel's and Neumann's functions, improper integral.

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